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2019-2020 FIRST® Tech Challenge

Scorekeeper Manual



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Thank you for taking the time to volunteer for a FIRST® Tech Challenge event. FIRST® and FIRST® Tech Challenge rely heavily on volunteers to ensure events run smoothly and are a fun experience for teams and their families, which could not happen without people like you. With over 5,500 teams competing yearly, your dedication and commitment are essential to the success of each event and the FIRST Tech Challenge program. Thank you for your time and effort in supporting the mission of FIRST!

Revision History		
Revision	Date	Description
1	10/18/2018	Initial Release
2	10/22/2018	Removed duplicate steps for step-by-step example for using paper score sheets.
		<ul style="list-style-type: none"> • Updated Tournament Org Charts • Appendix A – Update to on call event support line to include scoring system support.
3	11/8/18	Corrections and additional instructions (v0.5.1) <ul style="list-style-type: none"> • JDK required for Mac Users. • Provide instructions for uploading match results to FIRST. • Award Management • Match Results Feature (with Virtual Scoresheets) • Info for accessing log file, version number, and IP address.
3.1	9/27/2019	Skystone season specific updates: <ul style="list-style-type: none"> • Setup event with an authentication key. • Uploading results. • User interface is season specific.
3.2	11/05/19	Minimum hardware configuration updates <ul style="list-style-type: none"> • Scoring server minimum requirements • Network requirements Match Control Page – Important Note

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1. Introduction

1.1. What is FIRST® Tech Challenge?

FIRST® Tech Challenge is a student-centered program that focuses on giving students a unique and stimulating experience. Each year, teams engage in a new game where they design, build, test, and program autonomous and driver operated robots that must perform a series of tasks. To learn more about FIRST® Tech Challenge and other FIRST® Programs, visit www.firstinspires.org.

2. Gracious Professionalism®

FIRST® uses this term to describe our programs' intent.

Gracious Professionalism® is a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community.

Watch Dr. Woodie Flowers explain *Gracious Professionalism* in this [short video](#).

Learn more about the roles of volunteers on our [Volunteer Resources page](#), "Volunteer Role Description".

3. FIRST Volunteer Rights and Responsibilities

NOTICE OF NON-DISCRIMINATION

For Inspiration and Recognition of Science and Technology (FIRST®) does not discriminate based on race, color, national origin, sex, disability, age, status as a veteran who served in the military, religion, gender, gender identity, or gender expression in its programs and activities.

Keep updated at: <http://www.firstinspires.org/about/legal-notices>

4. Job Description

- **Physical/Technical Requirements:**

- Technical – High
- Physical – Low
- Administrative – High
- Communication – High

- **Time commitment:**

- The Scorekeeper should expect to arrive early at the event to help set up the scoring software and displays.
- The Scorekeeper should expect to be at the event for the entire duration, approximately 8 hours for a full-day event. League Meet events are typically shorter.

- **Proper Dress:**

- The Scorekeeper generally sits at the scoring system. Comfortable shoes and attire are encouraged.
- ANSI Z87.1 certified safety glasses are required in the competition area.

4.1. Volunteer Training and Certification

Volunteers must apply to their role using the [Volunteer Registration System](#). After the volunteer has applied to their role, FIRST Tech Challenge will send an email to the volunteer with access instructions to training and certifications (if applicable). Emails with access to the training and certifications will be sent within one business day from applying to the role. If you have applied for a role but have not received access to the training, please email FTCTrainingSupport@firstinspires.org.

The Scorekeeper should read this manual before the event. She/he should speak to the Tournament Director or Affiliate Partner to check for additional requirements, such as meetings before the event or run-throughs of the queuing path before the event.

The Scorekeeper is required to pass the certification test prior to the event. The estimated training time is one hour.

The Scorekeeper should familiarize him or herself with the [FIRST Tech Challenge Scoring Software](#) prior to the event.

4.2. Volunteer Minimum Age Requirement

FIRST requires that FIRST Event volunteers be at least 13 years old, however, the Regional Planning Committee can increase the age requirement as needed. Adult volunteers cannot have children with them while volunteering nor be responsible for supervising children at the event. Children under the minimum age are welcome at FIRST Competitions with suitable supervision by someone other than a volunteer.

4.3. Key Volunteer Role Minimum Age Requirement

Volunteers MUST be at least 21 years old before they can serve in a Key Volunteer Role for the FIRST Tech Challenge. Key Volunteer positions include: Volunteer Coordinator, Head Referee, Judge Advisor, Field Manager, Field Technical Advisor, Lead Robot Inspector, Lead Field Inspector, and Lead Scorekeeper. Local Affiliate Partners can make case by case exceptions to these guidelines by contacting FIRST for approval.

4.4. Bring a Friend!

Volunteers are a huge part of the FIRST Tech Challenge Program and continuing to inspire students to seek out careers in science, technology, engineering, and math (STEM). FIRST Tech Challenge needs your help in recruiting new volunteers to keep our programs thriving for future generations! If you have a friend or co-worker you think would be interested in volunteering at an event, there are just a few easy steps to help get them involved!

1. Check out our full list of [volunteer opportunities](#) online!
2. Have them apply for the event in the [Volunteer Registration System](#). Volunteers must be screened before volunteering.
3. Have them contact Firsttechchallenge@firstinspires.org with any questions they may have.

If they are concerned about jumping in head first, no worries! Job shadowing at a FIRST Tech Challenge event is a great way to get a taste of what a full day's worth of competition looks like. New volunteers can discover ways they can fit their personal skills into a volunteer position!

5. Overview of Responsibilities

The FIRST Tech Challenge lead Scorekeeper (referred to in this manual as “the Scorekeeper”) is the person responsible for making sure that the scoring software is setup correctly for use at the event. The Scorekeeper helps the flow of the event and provides information to the teams and to the audience. Being prepared before and diligent during the event will help to provide a positive experience for all participants. The responsibilities of a Scorekeeper include:

- Participation in training prior to the event.
- Accurately entering match scores into the scoring system.
- Entering team and sponsor information into the scoring software.
- Generating matches for the event.
- Setting up displays for audience to view scores.
- Communicating match schedules to key volunteers such as Referees, Judges, Tournament Directors, etc.

Make sure to speak with the Affiliate Partner or Tournament Director prior to the event to determine if there are additional responsibilities and time commitments to set up the Scoring computers and displays. At some events, the Scorekeeper may be responsible for setting up the computers, displays, etc. There are many components that are required to be set up to run the scoring system and displays correctly.

A Scorekeeper must be confident and comfortable with the system to be able to reliably record results during the hectic pace of an FIRST Tech Challenge event. Learning the role and equipment ahead of time will go a long way towards keeping the event running smoothly and on time.

6. Pre-Event Day Responsibilities

Outlined below are responsibilities Scorekeepers have before event day. Make sure to check with the tournament director to see if they need help setting up before the event, and when you should be there to set up the scoring equipment. Many events set up the fields and A/V equipment the night before, which may also include loading the scoring system onto the scoring computer and setup of the display screen. Be sure to check with the tournament director or Affiliate Partner to understand what is being prepared ahead of time, and what needs to be done on the morning of the event.

- Review the Scorekeeper Quick Start Guide and the Scorekeeper User Manual.
- Watch the pre-recorded Scorekeeper training videos. This will help familiarize with the system and how it operates.
- Pass the Scorekeeper certification test
- Familiarize yourself with the scoring software
- (Optional) Attend a Monthly Key Role Discussion Q&A call. This will provide the opportunity to ask questions, or provide feedback to other Scorekeepers.

7. Event Day Responsibilities

7.1. Scoring System Setup

Setup of the Scoring System is usually completed the day before the event. The Affiliate Partner or tournament director will be able to guide you on what has been completed the day before. On the morning of the event, you will need to turn on the scoring computer and displays, and start the scoring system.

7.2. Pre-Match Responsibilities

- Work with Affiliate Partners or Tournament Director to establish when teams are declared “no show”
- Work with Affiliate Partners or Tournament Director to determine logistics of the event, such as number of matches to be played, or the time schedule for the matches.
- Ensure that all team and sponsor information has been entered correctly.
- When all teams have checked in, update team information as necessary and generate matches.
- Communicate match schedules to key volunteers.
- Generate the inspection schedule.
- Generate the judging schedule.

See Appendix B for the Event Checklist.

Important – generate Matches only **AFTER** all teams have checked in, and have been certified to play. **DO NOT EVER** generate and distribute the Match list prior these steps, as substitutions cannot be made for absent teams.

7.3. Game Play

The Scorekeeper and the Emcee/Game Announcer should agree on a “ready” signal to start the match timer clock prior to the start of the matches. The match timer clock shall begin after the Emcee/Game announcer has verified that both alliances and the Scorekeeper are ready, and a 3-2-1 countdown.

7.4. Generate Alliances

After all qualification matches have been played, the Scorekeeper will enter the formed alliances and generate matches for the elimination matches.

7.5. Awards

The Scorekeeper may be asked to enter the awards into the scoring system and print the awards ceremony script for the Emcee/Game Announcer.

Other event-day duties may be assigned, as needed.

8. Post-Event Responsibilities

For League Meet Events - the Scorekeeper must save and provide the results to the Tournament Director or Affiliate Partner. These results contain important team information that needs to be loaded into the Scoring System at the next League Meet or League Tournament.

Qualifying Tournaments, League Tournament, State/Region Championship Events – After all matches have been played and all scores have been recorded, the event score results must be submitted to FIRST. See the section [Uploading Event Data to FIRST](#) for more information.

9. Introduction to the Scoring System

What is the FIRST Tech Challenge Scoring System?

The FIRST Tech Challenge Scoring System (also known as *FIRST Tech Challenge Live*) is a software program that has multiple functions to allow you to input and track vital information at an event.

The system allows a Scorekeeper to generate and track the following:

- Team information,
- Sponsor information,
- Match schedules,
- Match results (including an option for real-time score tracking)
- Alliance selection for elimination and final matches.

This software will also allow you to display sponsor information and team match results to teams and spectators. This manual will go through step by step instructions on how to run the program correctly and efficiently.

10. System Hardware

10.1. System Requirements

The *FIRST Tech Challenge Live* software is available on the Windows and Mac platforms. It is a browser-based application, meaning that you interact with the system exclusively through a web browser. The system also supports real-time score tracking. Live score data can be entered into the system using a tablet.

10.1.1. Windows

- Windows 7 or 10
- Java 8 or higher (available from www.java.com, only needed for the laptop running system software)
- Google Chrome; Firefox is not supported.
- Support for Wi-Fi if connecting to a wireless network
- Ethernet adapter if connecting to a wired network

10.1.2. Mac

- macOS Sierra or greater
- Java 8 SDK or higher (available from www.java.com, only needed for the laptop running system software)
 - Note – Unlike the Windows environment, macOS requires the Java Development Kit (JDK) to run. Windows only requires the Java Runtime Environment (JRE) to run.
 - If you install the JDK software onto your Mac, you should not need to install the JRE software. The JRE should already be included as part of the JDK
 - The JDK software can be downloaded from the following Oracle web link:
 - <https://www.oracle.com/technetwork/java/javase/downloads/index.html>

The screenshot shows the Java SE Development Kit 8 Downloads page. At the top, there are tabs for Overview, Downloads (which is selected), Documentation, Community, Technologies, and Training. Below the tabs, the title "Java SE Development Kit 8 Downloads" is displayed, followed by a brief description of the JDK. A section titled "See also:" lists links to the Java Developer Newsletter, Java Developer Day workshops, and Java Magazine. Below this, two checksum links are provided: JDK 8u191 checksum and JDK 8u192 checksum.

In the center, a modal window titled "Java SE Development Kit 8u191" displays the message: "You must accept the Oracle Binary Code License Agreement for Java SE to download this software." It contains two radio buttons: "Accept License Agreement" (selected) and "Decline License Agreement". The "Accept License Agreement" button is highlighted with a red box.

Below the modal is a table of download options. The columns are Product / File Description, File Size, and Download. The table includes entries for various platforms: Linux ARM 32 Hard Float ABI, Linux ARM 64 Hard Float ABI, Linux x86, Linux x86, Linux x64, Linux v64, Mac OS X x64, Solaris SPARC 32-bit (SVR4 package), Solaris SPARC 64-bit, Solaris x64 (SVR4 package), Solaris x64, Windows x86, and Windows x64. The Mac OS X x64 row is also highlighted with a red box.

Figure 1 - Accept the License Agreement, then select the Mac OS X x64 version to download.

- Google Chrome
- Support for Wi-Fi if connecting to a wireless network
- Ethernet adapter if connecting to a wired network

10.1.3. Android Tablet (for Real-time Score Tracking)

- Android Marshmallow (6.x) or greater
- Google Chrome
- Support for Wi-Fi

Note: Some event hosts prefer to use Amazon Kindle tablets for real-time score tracking. Kindle tablets can be configured to work well with the scoring system. Kindle tablets, however, do *not* typically have Google's Chrome Browser installed. Additional steps are required to get the Chrome software running properly on a Kindle tablet. Details on installing Chrome on a Kindle tablet are beyond the scope of this documentation.

Also note: that some Kindle tablets have an operating system that is based on an older version of Android (Lollipop). These Kindle devices can still be used with the scoring system.

10.1.4. iOS Tablet (for Real-time Score Tracking)

- iOS 8 or greater
- Google Chrome

Support for Wi-Fi

10.2. System Layout

The FIRST Tech Challenge Live software is flexible and can be used in a variety of configurations. This section provides an example of a basic configuration and an example of a more complex configuration.

10.2.1. Basic Configuration with Paper Scoring

The most basic configuration requires a single laptop that will serve as both the scorekeeper computer and as the field display computer. This configuration also includes an external monitor (to serve as a field side display), and a printer (to print match schedules and scoresheets).

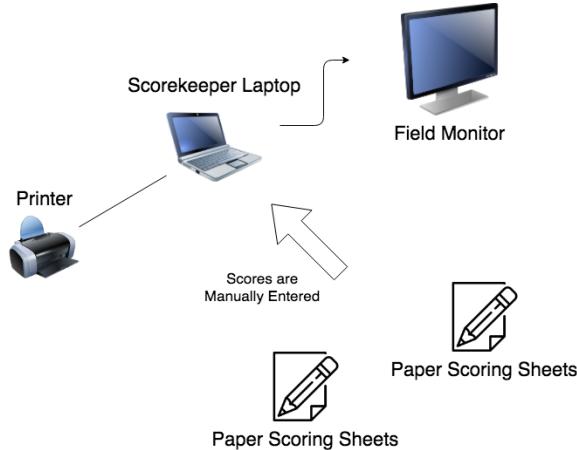


Figure 2 - A very basic layout with paper scoring.

10.2.2. Advanced Configuration with Real-Time Scoring

The system also supports real-time score tracking using a pair of wireless tablets.

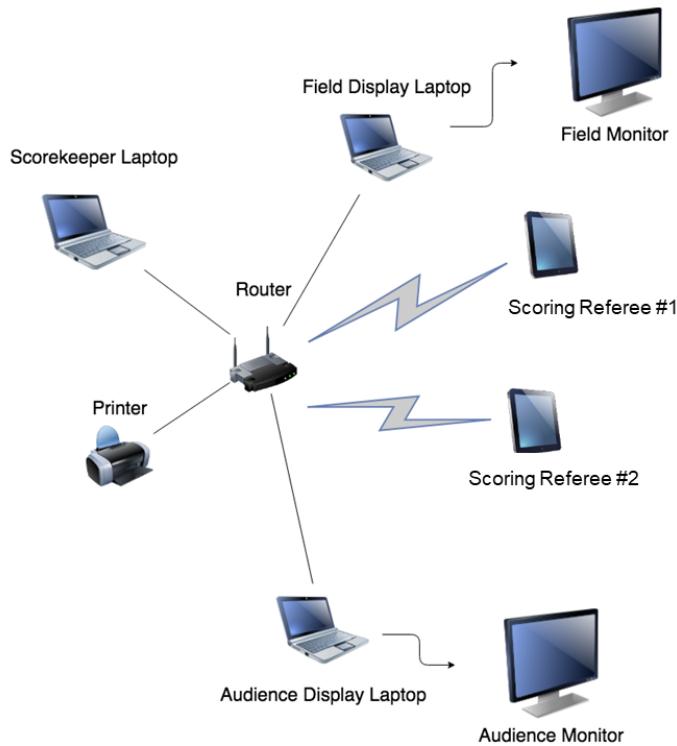


Figure 3 – An advanced configuration with support for real-time tracking.

This advanced configuration includes the following components:

- Scorekeeper Laptop – A laptop that has the *FIRST Tech Challenge Live* scorekeeping software installed. This laptop acts as a server for the whole system. It is also used for match control and scorekeeping (such as reviewing, editing, and committing scores).
- Printer – Used to print match schedules, reports, and other useful documents.
- Network Router with Wi-Fi support – Used to connect system components together.
- Field Display Laptop – A laptop that uses a web browser and a network connection (wired or wireless) to access the system server and display field-related information during an event. It is connected to a large screen monitor.
- Audience Display Laptop - A laptop that uses a web browser and a network connection (wired or wireless) to access the system server and display spectator-specific information during an event. It is connected to a large screen monitor.
- Scoring Referee Tablets (x2) – Referees use these tablets to track, in real time, the score during a match. After a match is complete, referees can review, edit and submit their scores to the system. The tablets use a wireless connection and a web browser to access the system server.

Important Tips:

- You will need to know the IP address of your computer that is running the system software (i.e., the scorekeeper laptop in this example). When another device, such as a referee tablet or a display computer, wants to access the system, the user will have to provide the IP address of the scorekeeper laptop to the web browser in order to access the system functions. Consult with your IT administrator on what the IP address is for your server or refer to the section
- Wireless activity for the scoring system should operate on a Wi-Fi channel that will not interfere with the control of the competition robots.
- Audio cues (such as the match start or match stop sound effects) for a public announcement (PA) system can be pulled from any of the Display computers. It is recommended that a single computer is used as the source of the PA audio (to avoid audio synchronization issues).

11. Download and Installation

11.1. Important Tips for Running the System Software

Here are some tips before you get started:

- Disable any firewall, or open appropriate ports, on the computer that will be running the server.
- Disable any ad blocking software on devices that will interface with the server. The ad blocking software occasionally misinterprets server resources as ads.
- Ensure that Google Chrome is installed and is the preferred browser.
- Important note: Firefox browser is not supported!
- If it has been more than a few days since the software was released and you have internet access, perform a data download before creating the event to ensure team info is up to date. "Event Admin" dropdown -> Manage Server -> Data Download.

11.2. Minimum Hardware Configuration

For most events, the hardware requirements to run the FTC Live scoring software are very modest.

11.2.1. Scoring Server Minimum Requirements (Windows/Mac/Linux)

- Intel Core i5 Processor
- 4 GB of RAM
- 300 MB of available disk space
- CAT 5 Ethernet adapter (USB connected would be OK if built-in not available)
- 802.11 WiFi adapter

Note: If you are running a large event, such as a dual division event, a higher performing computer might be warranted.

11.2.2. Network Requirements

The selection and configuration of the network hardware can be more critical than the selection of the server hardware to the success of your live scoring event.

- Use a dedicated (i.e., not shared with other users or applications), local network to connect your scoring devices.
- To avoid latency issues, the scoring server should be local to your event (and not run through a remote Internet/Cloud connection).
- Scoring network should be on its own secure network (i.e., not open to the public). This should minimize the risk of malicious activity from occurring towards the scoring system.
- Use a wired connection whenever possible (with the exception of the real-time scoring referee tablets, which are typically wireless devices).
- If you need to use a wireless connection, work with your FTA and venue IT staff to make sure you select a wireless channel that does not interfere with the competition robots.
- Check with your venue's IT staff to see if a WiFi Blocker is present. If one is present, you will not be able to use wireless scoretracking devices unless the staff disables this function.
- Use a modern (made within the past 3 years) switch/access point that is powerful enough to accommodate the number of devices needed at your event
 - FIRST has received credible reports of older, “underpowered” switch/access points being unable to support a large enough number of devices operating on the scoring system network.
 - Use an appropriately sized network device that will be able to accommodate all your scoring-related devices simultaneously.

11.3. Downloading the Software Package

The FIRST Tech Challenge Live software is available for download from the following link:

<https://github.com/FIRST-Tech-Challenge/scorekeeper/releases>

The software is stored as a compressed archive file and is available in .zip or .tar format.

Also note: that Windows and Mac users will most likely want to download the “.zip” version of the archived software.

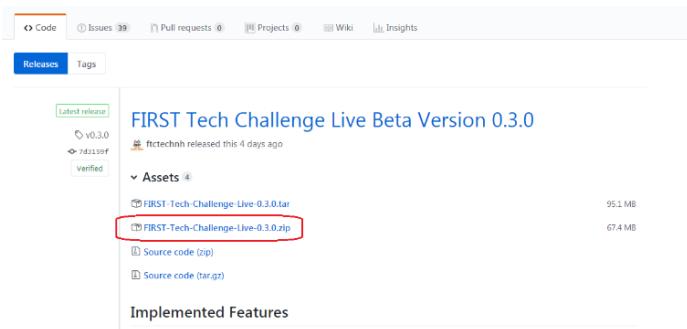


Figure 4 - Releases begin with the phrase "FIRST-Tech-Challenge-Live".

To use the software, unzip the downloaded file into the folder of your choice. *FIRST* suggests that users save the file on the computer's desktop to easily access the program. The software will run from this directory.

To extract or unzip the file, right mouse click on the archive file and select the appropriate option to extract the compressed files to your computer.

11.4. Launching the FIRST Tech Challenge Live Server

Once you have successfully extracted the contents of the archive file, you will need to launch the system server. This server will run in a window on your computer. You will access this server through your Chrome web browser.

11.4.1. Launching the Server Using Windows

Use Windows Explorer to navigate to the main program directory. Find the Windows *batch* file called "FIRST-Tech-Challenge-Live-Windows.bat" and double click on it to launch the server.

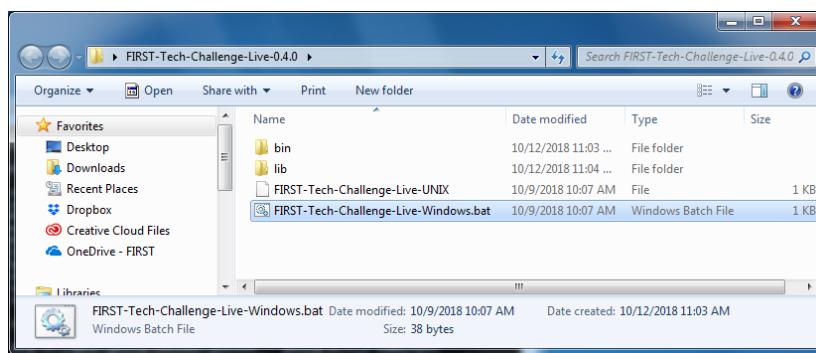


Figure 5 - Double click on the FIRST-Tech-Challenge-Live-Windows.bat batch file to launch server.

It is safe to ignore the warning and click on "Run" to run the software.

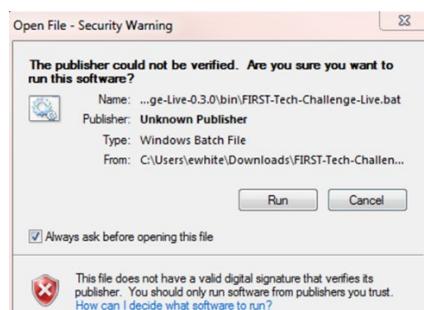


Figure 6 - Windows 7 users might see a warning message similar to this one.

Note: If you are a Windows 10 user you might need to click on the “More info” link on the warning message and then the “Run anyway” button to run the software.

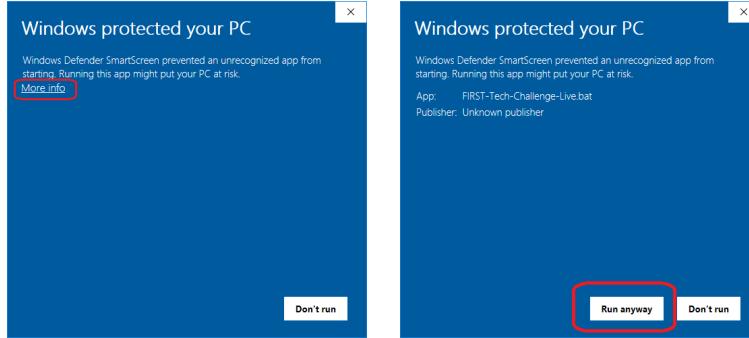


Figure 7 - Click on "More info" then "Run anyway" to run the software.

A black terminal window will pop open and will need to remain open while you are using the software. This is the window in which the system server is running.

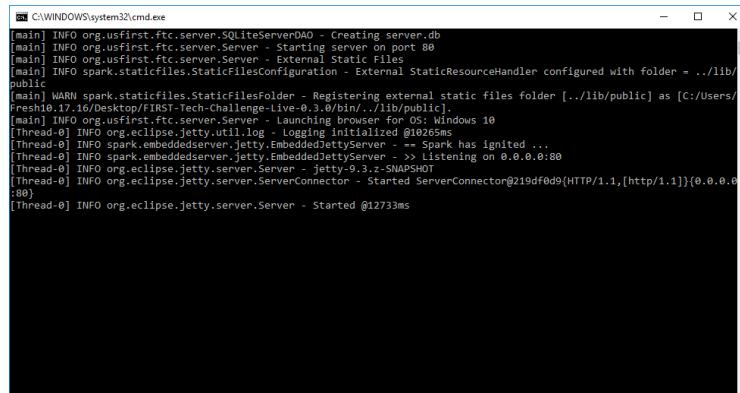


Figure 8 - The batch file will launch the system server in a terminal window.

After the server is started, the batch file will launch your default web browser and display the main webpage (web address of “localhost”).

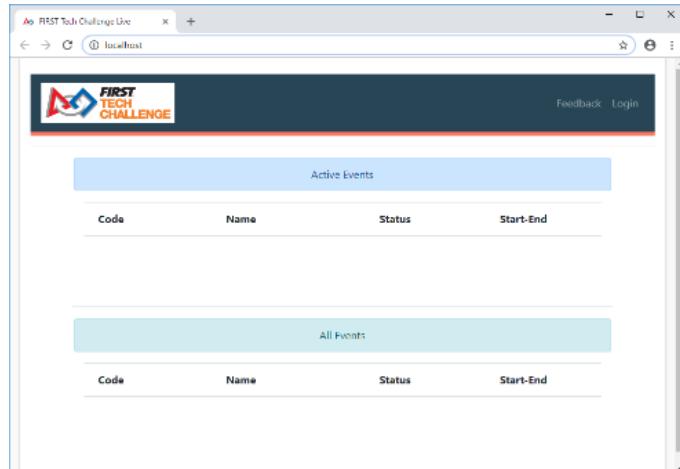


Figure 9 – The software should launch your default browser and display the system’s main page.

Gracious Professionalism® - “Doing your best work while treating others with respect and kindness - It's what makes FIRST, first.”

11.4.2. Launching the Server Using macOS

Using Finder, navigate to the main directory of the program folder and locate the script file named “FIRST-Tech-Challenge-Live-UNIX”. Double click on the file to run the script.

Note: macOS might warn you that the application was downloaded from the Internet. If you see this warning, click on the “Open” button to allow your computer to run this application.

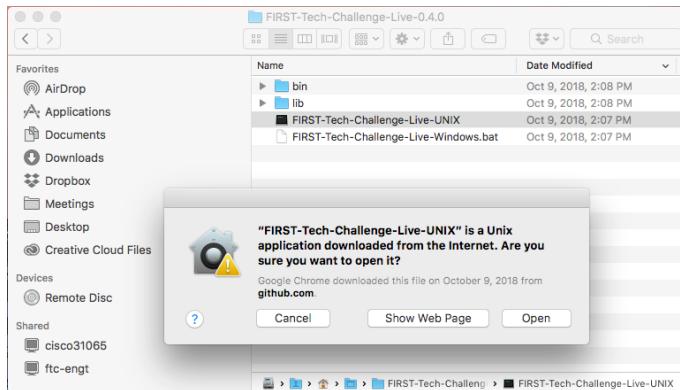


Figure 10 - If prompted, click on the "Open" button to allow your Mac to run the software.

For Mac computers, the user account that is running the scorekeeping software typically needs administrative access on the computer to run the software properly. When you launch the “FIRST-Tech-Challenge-Live-UNIX” script, the software will check to see if you are running the script with administrative access. If it does not think it has administrative access, the application will prompt you for your Mac’s password. A macOS terminal will appear and the system will prompt you to login using your user password. Type in the password and press return.

```
Last login: Fri Oct 12 12:09:14 on ttys002
Toms-MacBook-Pro:~ tom$ /Users/tom/Desktop/FIRST-Tech-Challenge-Live-0.4.0/FIRST
-Tech-Challenge-Live-UNIX ; exit;
Welcome to FIRST Tech Challenge Live!
This application requires super user status.
If prompted, please enter in your account password.
sudo ./FIRST-Tech-Challenge-Live
Password: [REDACTED]
```

Figure 11 - If prompted, type in your user password for your Mac account and press RETURN.

If successful, the terminal window will show that the scorekeeping server is running. Note that while you are using the software, you should keep the server running in the background on your Mac computer. You can minimize the terminal window, but do not close the window or the system will stop working. After the server is started, the batch file should also launch your default web browser and display the main system webpage (with a web address of “localhost”, see Figure 11).

Note: On some Macs, the system will launch the main page in a Safari browser, even though you might have Chrome set as your account's default browser. If this happens, FIRST recommends closing the Safari window and open a Chrome window instead. Specify the address of "localhost" in the Chrome window to access the scorekeeping server.



```
tom — FIRST-Tech-Challenge-Live-UNIX — java < FIRST-Tech-Challenge-Live-...
League ranking for seacost
League ranking for queen_city
combined ranking
[null, null, null, null]
[main] INFO org.usfirst.ftc.global.SQLiteGlobalDAO - Loaded active event granite
_event3_18
League ranking for gate_city
League ranking for seacost
League ranking for queen_city
combined ranking
[null, null, null, null]
[main] INFO org.usfirst.ftc.global.SQLiteGlobalDAO - Loaded active event granite
_meet4_18
[Thread-0] INFO org.eclipse.jetty.util.log - Logging initialized @4295ms
[main] INFO org.usfirst.ftc.server.Server - Launching browser for OS: Mac OS X
[Thread-0] INFO spark.embeddedserver.jetty.EmbeddedJettyServer - == Spark has initiated ...
[Thread-0] INFO spark.embeddedserver.jetty.EmbeddedJettyServer - >> Listening on
0.0.0.0:80
[Thread-0] INFO org.eclipse.jetty.server.Server - jetty-9.3.z-SNAPSHOT
[Thread-0] INFO org.eclipse.jetty.server.ServerConnector - Started ServerConnector@420447df{HTTP/1.1,[http/1.1]}{0.0.0.0:80}
[Thread-0] INFO org.eclipse.jetty.server.Server - Started @4425ms
□
```

Figure 12 - If successful, the terminal will show that the server software is running.

11.5. Using an Alternate HTTP Port (Advanced Topic)

By default, when you launch the server, the software tries to use the default HTTP port (port 80) when it launches the web server that is used by the scoring software. In some cases, the default port might not be available on the laptop that is running the system's server.

Or, if a mac user does not have administrative privileges on the computer (which is needed to use the default port), then he or she can still run the software if they specify an alternate HTTP port for the scorekeeper server.

For these cases, it is possible to change the port by passing the new port value as a command line argument. Note that this is an advanced topic. Most scorekeepers will not need to know how to change the port.

11.5.1. Using an Alternate HTTP Port on a Windows Computer

Open a Windows command line terminal ("cmd.exe") and navigate to the "bin" subdirectory of the scorekeeping software's program folder. In the command window, type in the following command

FIRST-Tech-Challenge-Live.bat -p <port number>

Where <port number> is replaced by the value of the port number you'd like to use ("8080" for example). Press RETURN and the software should invoke the webserver and use the port specified in the command line.

```
C:\Windows\system32\cmd.exe
C:\Users\teng\Desktop\FIRST-Tech-Challenge-Live-0.4.0\bin>dir
Volume in drive C has no label.
Volume Serial Number is EE2E-26EE

Directory of C:\Users\teng\Desktop\FIRST-Tech-Challenge-Live-0.4.0\bin

10/12/2018 11:03 AM <DIR> .
10/12/2018 11:03 AM <DIR> ..
10/09/2018 02:08 PM 7,177 FIRST-Tech-Challenge-Live
10/09/2018 02:08 PM 4,633 FIRST-Tech-Challenge-Live.bat
              2 File(s)   11,810 bytes
              2 Dir(s)  60,864,454,656 bytes free

C:\Users\teng\Desktop\FIRST-Tech-Challenge-Live-0.4.0\bin>FIRST-Tech-Challenge-Live.bat -p 8080
```

Figure 13 - Include the argument "-p 8080" to launch the server on port 8080.

When the install script launches your web browser it should include the port number (in this example, “:8080”) when opening the web page for the address “localhost”.

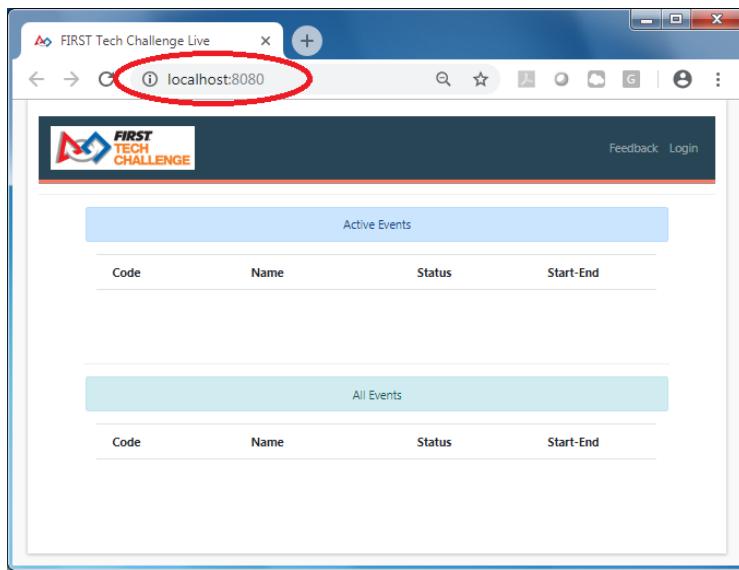


Figure 14 – If you changed the port number, then you must include the new value in the address when accessing the server.

11.5.2. Using an Alternate HTTP Port on a Mac Computer

One advantage of using an alternate HTTP port number on a Mac is that it does not require administrative access to run the software. This is useful if your user account is restricted and does not have administrative privileges.

You will need to use a *terminal* window to launch the software using a different HTTP port. The terminal program is in the “Utilities” subfolder of the macOS “Applications” folder.

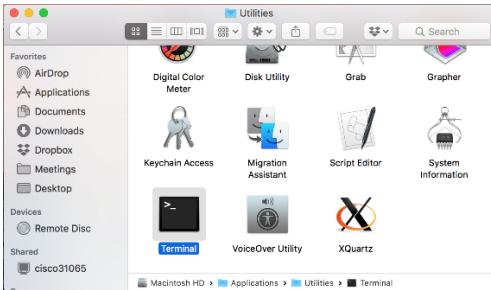


Figure 15- The terminal application is in the “Utilities” subfolder of the “Applications” folder.

Launch the terminal app from the Utilities folder. You will need to type commands into the terminal window to navigate to the FIRST Tech Challenge Live directory and then to launch the server software. Note that macOS is a case sensitive operating system so if you copy the commands in the example below, make sure the capitalization is correct.

For example, assume that the software is in a folder on the Desktop of the current user and has the name “FIRST-Tech-Challenge-Live-0.4.0”. You will need to type in the following command at the terminal prompt to change to the “bin” subdirectory.

```
cd ~/Desktop/FIRST-Tech-Challenge-Live-0.4.0/bin/
```

If you successfully changed to this “bin” subdirectory, you can invoke the software using the following command (don’t forget the “.” before the name of the file):

```
./FIRST-Tech-Challenge-Live -p <port number>
```

Where <port number> is replaced by the desired port number value (for example, “8080”). The software should invoke the system server and use the port specified in the command line. When the install script launches your web browser it should include the port number (in this example, “:8080”) when opening the web page for the address “localhost” (see Figure 16).

11.5.3. Navigating to the Server Using an Alternate Port

If you launched the server with an alternate HTTP port, then when you want to connect to the scoring system server, you must specify the port number as part of the server address. For example, if the system is listening on port 8080, then you must append a “:8080” to your web address when navigating to the server. If you do not specify the port at the end of the address, the web browser might fail to connect to the scorekeeping server.

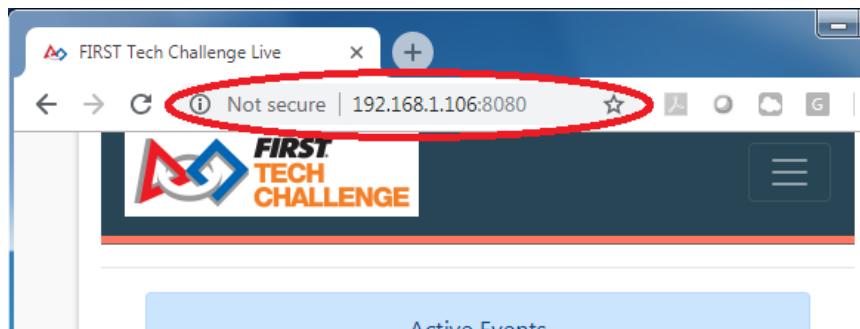


Figure 16 – Specify the port number in the address if your scorekeeping server is using an alternate port number.

12. Setting Up an Event

12.1. Getting Version Number and IP Address

Due to software updates, it is useful to know the version number of the *FIRST* Tech Challenge Live software that you are currently running. It is also helpful to know the IP address of the scorekeeping server. This information can be obtained from the top of the browser screen when viewing the *FIRST* Tech Challenge Live pages (software version 0.4.3 and higher).

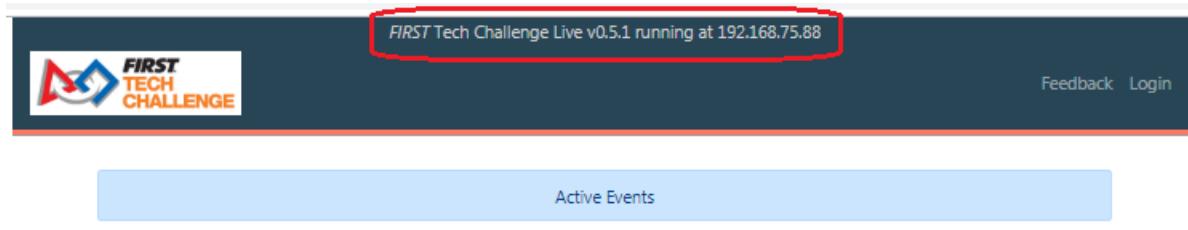


Figure 17 - The software version number and the system IP address

12.2. Logging in to the System

- Click on “Login” at the top right corner of the screen.
- You can log in with the username “local” and leave the password field blank.

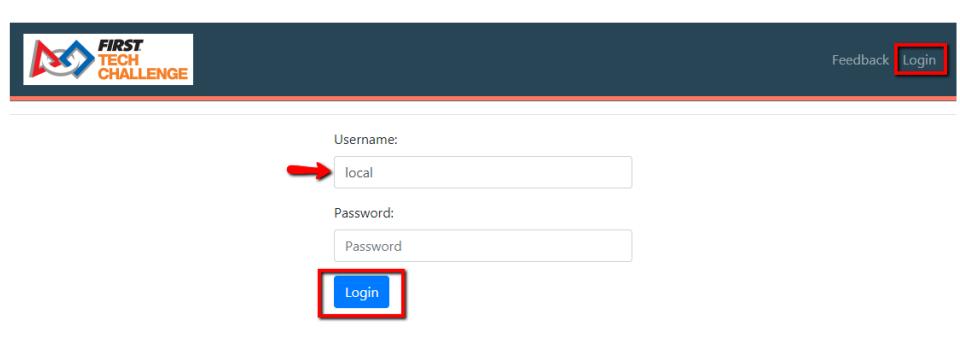


Figure 18 - Log in to the "local" account to gain access to the system.

Important Note: the “local” user account is the primary administrative account for the system. It is only available locally on the computer that is running the server application. Users should take care to secure this computer to make sure an unauthorized user will not access the “local” account.

12.3. Navigating the System’s Home Screen

Once you have logged in to the system, the home screen should look like the following image:

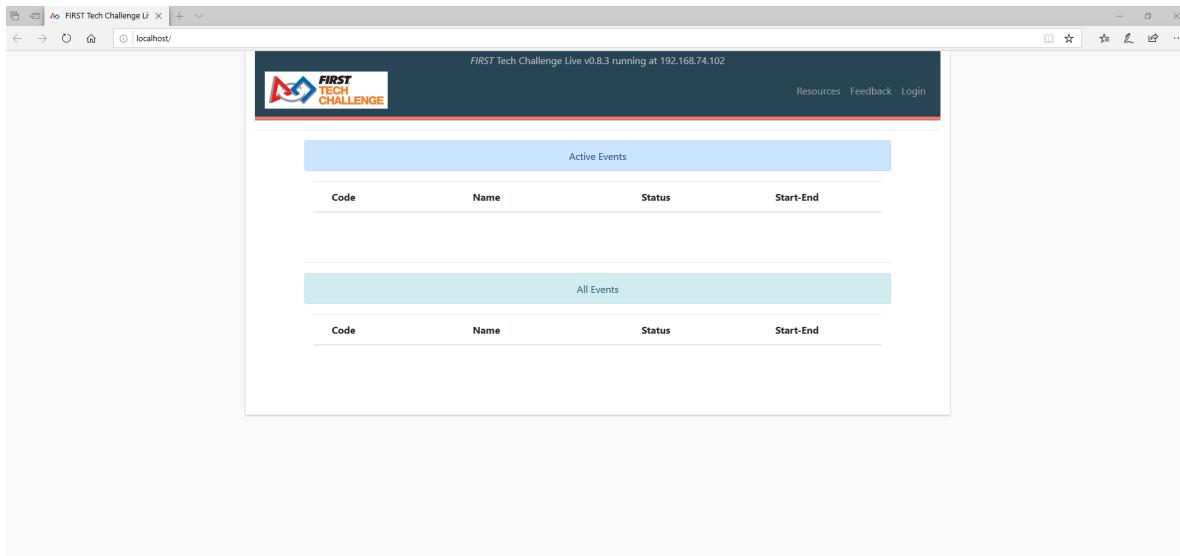


Figure 19 - Clicking on the FIRST Tech Challenge logo (upper left-hand corner of window) will take you to the system's home screen.

Note: If you do not have any events defined for your system, these lists will be empty.

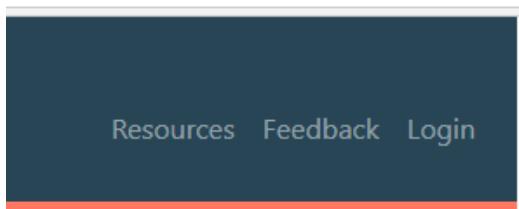


Figure 20 – Feedback, resources, and account info links are available in the upper right hand corner of the home screen.

In the upper right-hand corner of the screen you will find:

- Resources: Opens a directory of scorekeeper related documents, including printable scoresheets.
- Feedback: Submit your concerns to the FIRST Tech Challenge Live software developers.
- Login: User account information, you can also click on the “Hello, local” link to get information about your current user account.

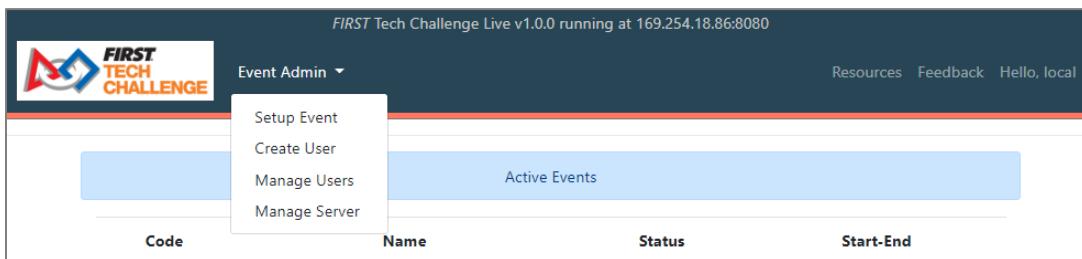


Figure 21 –After login, Event Admin appears.

There are options available in the “Event Admin” menu:

- **Setup Event:** This will allow you to create a single event and prompt you to enter an authentication key.

- **Create User:** This gives you the option to create individual user accounts for users that may only require access to a subset of the software features.
- **Manage Users:** When you have a list of users for the events, this section will allow you to manage the users and their system access.
- **Manage Server:** This allows you to manage the server for an event.

12.4. Set Up an Event

1. Once you've logged in, the "Event Admin" dropdown appears. Select "Setup Event":

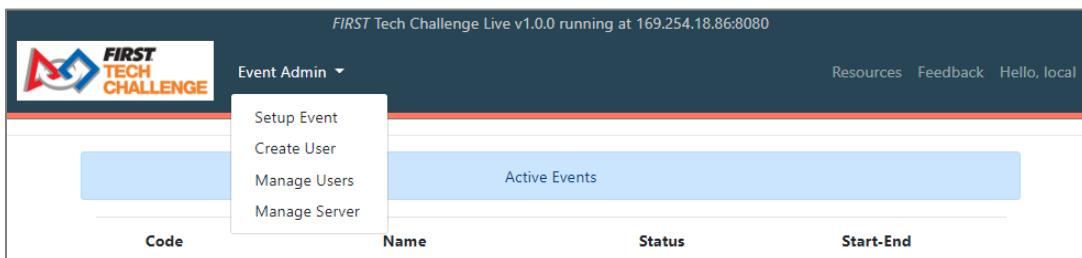


Figure 22 - Select "Setup Event" option to create a new event.

2. Opens the Setup Event page with a prompt to input the Region Key. Regions will be sent a Region Key, which your Affiliate Partner will distribute to event scorekeepers. This key will be required to upload event data - which every official event needs to do (even league meets!).

Figure 23 Prompts to enter a key

Important Note: The key will be validated upon connection to FIRST's servers. If a region does not appear, the key is not recognized. We strongly recommend using a copy/paste operation to enter the key.

Note: If you do not have a key at the moment, or are running a non-official/test event, you can skip the entry. It will allow you to enter the key later for upload.

The screenshot shows the 'Setup Event' page. At the top, it says 'Region Key' followed by a text input field containing 'USNH00-XXXXXX-XXXX-XXXXX-XXXXXXXXXXXX'. To the right of the input field is a 'Submit' button. Below the input field, the text 'Region: New Hampshire' is displayed. Underneath the input field, there is a link 'Skip this Step >>'. A note at the bottom states: 'Note: If you are testing the system please skip this step. If you do not have a Region key, ask your affiliate partner. If your AP is not immediately available or does not have the key, you may skip this step for now. A key will be required to upload event results to FIRST after the event. Please remember to upload results from all official events, even League Meets, if possible.'

Figure 24 - A region appears when key is entered correctly.

After you submit the key, it takes you to the Create Event page. If a key was entered on the Setup page, it will auto-fill the Region field. If you skipped that step, you will need to enter it yourself.

The screenshot shows the 'Create Event' page. It includes fields for 'Event Code' (with a placeholder 'Event Code'), 'Event Name' (placeholder 'Event Name'), 'Region' (dropdown menu showing 'New Hampshire'), 'Event Type' (dropdown menu showing 'Scrimmage'), 'Event Start Date' (placeholder 'mm/dd/yyyy'), 'Event End Date' (placeholder 'mm/dd/yyyy'), a checkbox for 'Dual-Division Event' (unchecked), 'Number of Fields' (text input field showing '1'), and a large blue 'Create Event' button at the bottom.

Figure 25 - Create Event page with autofilled Region.

Gracious Professionalism® - "Doing your best work while treating others with respect and kindness - It's what makes FIRST, first."

When you want to create a new event, you are required to fill in the following fields:

- **Event Code:** The event code must be *unique, all lowercase*, and must *not contain spaces or special characters*. For example, an event code can be “leaguemeet01” or “nhqualifier1”. Important note for League organizers: the event codes for league meets should be unique within a league.
- **Event Name:** The event name is used for the scoring software and will appear on displays.
- **Event Type:** It is important to select the correct event type. *League meets must select the “League Meet” event type* for the rankings and score rollover to work correctly.
- **Event Start Date:** Select the start date of the event from the calendar.
- **Event End Date:** Select the end date from the calendar.
- **Number of Fields:** League Meets will be pre-populated with 1 field. Other event types will allow you to enter the number of competition fields at the event. Most events have 1 or 2 competition events.

Once you have entered in valid values for these fields, press the “Create Event” button to create the event.

The screenshot shows the FIRST Tech Challenge Live software interface. At the top, there is a header bar with the FIRST Tech Challenge logo, the text "FIRST Tech Challenge Live v0.8.3 running at 192.168.74.102", and a "Event Admin" dropdown menu. To the right of the dropdown are links for "Resources", "Feedback", and "Hello, local". The main content area is titled "Event Admin" and contains fields for entering event information. The fields are as follows:

- Event Code:** nhchampionship2019
- Event Name:** NH State Championship
- Event Type:** Championship (selected from a dropdown menu)
- Event Start Date:** 09/20/2019
- Event End Date:** 09/20/2019
- Dual-Division Event:** An unchecked checkbox.
- Number of Fields:** A text input field containing the value 2.

At the bottom of the form is a blue "Create Event" button.

Figure 26 - Specify the event information then press “Create Event” to create a new event.

12.5. The Event Dashboard

Once you have created a new event, the system should display an *Event Dashboard*, which lists the typical steps a user will follow to run a FIRST Tech Challenge event. You can also jump to the Event Dashboard for the currently selected event by selecting the event’s “Dashboard” option from the “Event Admin” drop down menu.

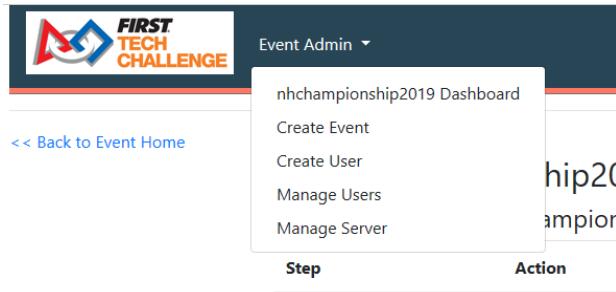


Figure 27 – You can use the Event Admin menu to navigate to the Dashboard if you have an event currently selected.

Each step has an action and a status listed on the Event Dashboard. The action items are also buttons. You can click on a button to perform an action.

Step	Action	Status
1	Edit Event	Done
2	Create Default Accounts	Not Started
3	Add/Edit Teams	0 teams added
4	Add/Edit Sponsors	0 sponsors added
5	Configure Judging/Inspection Tracking (Optional)	(Optional)
6	Create Judging/Inspection Schedule (Optional)	Not Started
7	Create Match Schedule	Not Started
8	Manage Awards	
9	Advancement Report	
10	Send Results to FIRST	
11	Download Archive File	

Figure 28 - Event Dashboard.

Note: This season a Send Results to FIRST button has been added.

Also, in the upper left-hand corner there is a “Back to Event Home” link. Clicking on this link will take you to the home page for the currently selected event.

12.6. Creating Default User Accounts

You will need to create a set of user accounts that your volunteers can use during the event. Click on the “Create Default Accounts” button on the Event Dashboard to display the Default Accounts screen.

The screenshot shows the software interface with the following details:

- Header:** FIRST Tech Challenge Live v0.8.3 running at 192.168.74.102
- User:** Event Admin ▾
- Links:** Resources, Feedback, Hello, local
- Buttons:** << Back to Dashboard, Generate New Random Accounts, Reset Accounts, Printer icon
- Title:** NH State Championship Default Accounts
- Text:** FIRST Tech Challenge Live © 2018-2019 FIRST®

Figure 29 – Press the “Generate New Random Accounts” to create a set of accounts for the currently selected event.

Press the “Generate New Random Accounts” to generate a set of user accounts that can be used to provide limited access to the system for the selected event.

Press the printer icon in the upper right-hand portion of the screen if you want to print a hard copy of the list.

The screenshot shows the software interface with the following details:

- Header:** FIRST Tech Challenge Live v0.8.3 running at 192.168.74.102
- User:** Event Admin ▾
- Links:** Resources, Feedback, Hello, local
- Buttons:** << Back to Dashboard, Generate New Random Accounts, Reset Accounts, Printer icon
- Title:** NH State Championship Default Accounts
- Table:** A table listing the generated accounts:

Username	Password
nhchampionship2019_audiencedisplay	diver172
nhchampionship2019_eventadmin	deadline916
nhchampionship2019_eventmanager	knickers081
nhchampionship2019_fielddisplay1	pacemaker318
nhchampionship2019_fielddisplay2	essay318
nhchampionship2019_inspector1	division828
nhchampionship2019_inspector2	gammaRay901

Figure 30 - Default user accounts generated by the system.

The password and access permissions for a user account can be changed by an event administrator by clicking on the “Manage Users” item from the “Event Admin” menu and then using the resulting screen to review and modify information for the selected account.

Username	Manage
nhchampionship2019_audencedisplay	Manage User
nhchampionship2019_eventadmin	Manage User
nhchampionship2019_eventmanager	Manage User
nhchampionship2019_fielddisplay1	Manage User

New users can be added by an event administrator by selecting the “Create User” item from “Event Admin” menu.

When they are logged into the system, an individual user can also change his/her account password by clicking on the “Hello” link in the upper right-hand corner.

An event administrator can reset the accounts back to their originally assigned passwords by clicking on the “Reset Accounts” button.

An event administrator can generate new random passwords for all the default accounts by pressing the “Generate New Random Accounts” button.

12.7. Adding/Editing Teams for an Event

Click on the “Add/Edit Teams” button on the Event Dashboard to add or edit teams for the selected event.

Note: The system comes with a pre-populated list of FIRST Tech Challenge teams that you can search from.

Number	Name	City	State/Province	Country	Rookie Year	Advanced	Division	Edit
--------	------	------	----------------	---------	-------------	----------	----------	------

12.7.1. Adding a Team Individually

You can add a team individually from the “Add Individually” tab:

- In the “Team Number to Add” field, type in the number of the team you would like to add.
- Press the word “Add” to the right of the Team Number to add the team to the event.

Figure 31 - Enter Team Number and hit "Add" to add a team.

- If the system already has the team's data prepopulated, the newly added team number will appear along with its team information. If the system does not have any data for the team, the remaining columns for the newly added team will be blank.
- Edit the empty field, then press Save. You can remove a team by pushing the delete button towards the right side of a team listing.
- You can switch to “Find by State/Province” mode by clicking on the “Find by State/Province” tab.
- If you are done adding and editing teams, press the “Done” button.

Figure 32 - Use the Edit or Delete buttons to modify or remove a team.

12.7.2. Adding Teams by State or Province

Another option is to select “Find by State/Province” tab to add teams:

- The system should display a list of available pre-populated teams by selected region.
- Use the Country and State/Province controls to select the country and state/province to display.

Figure 33 - Use the Country and State/Province controls to select your country and state/province.

- “Add?” column check boxes to add teams to the event.
- Select single teams with the “Add Individually” tab.
- If you are done adding and editing teams, press the “Done” button.

FIRST Tech Challenge Live v0.8.3 running at 192.168.74.102

FIRST TECH CHALLENGE

Event Admin ▾ Resources Feedback Hello, local

<< Back Adding to event 'nhchampionship2019'

Find by State/Province		Add Individually		Done	
Country:	USA	State/Province:	AE		
Number	Name	Affiliation	City	State/Province	Country
4130	Expected Error!!	DoDEA or DoDDS Europe&Aviano Middle/High School	APO	AE	USA
6582	Kaiserslautern HS - Raider Robotics	Kaiserslautern High School	APO	AE	USA
7867	Robotica Santi	DoDDS&Aviano Middle/High School	APO	AE	USA
9607	BHS Robotics	Bahrain Elem/High School	FPO	AE	USA
10934	Vicenza HS	Vicenza High School	APO	AE	USA
10935	Bahrain	Bahrain Elem/High School	FPO	AE	USA
10936	Sigonella High School	Sigonella Middle/High School	FPO	AE	USA
10937	Stuttgart HS	Stuttgart HS	APO	AE	USA
10938	Baumholder MHS	Baumholder MHS	APO	AE	USA
10939	Lakenheath HS RoboLancers	Lakenheath High School	APO	AE	USA
10940	Ramstein HS - #1 - METAL GEAR	Ramstein High School	APO	AE	USA
10941	SHAPE HS	Grandma's Attic/Andrews Federal Credit Union&Shape High School	APO	AE	USA
10942	Vilseck HS (RoboRaptors)	Vilseck High School	APO	AE	USA
10944	Kaiserslautern HS 2	Kaiserslautern High School & Kaiserslautern High School	APO	AE	USA
11342	Ramstein HS - #2 - TEAM ROBOTTO	SAME/AFCEA/OCSC&Ramstein High School	APO	AE	USA
11377	Ankara Unit School	Ankara Elem/High School	FPO	AE	USA
11405	Hohenfels MHS Tigers	Hohenfels High School	APO	AE	USA
11406	Stuttgart HS Panthers	Stuttgart HS	APO	AE	USA
11407	Vilseck HS (Falcons)	Vilseck High School	APO	AE	USA
13152	Netzaberg MS (FTC)	Netzaberg Middle School	APO	AE	USA
13275	Brussels HS Brigands	Brussels Elem/High School	APO	AE	USA
13279	Lakenheath HS1 RoboLancers	Lakenheath High School	APO	AE	USA
13282	AFNORTH HS Lions	Afnorth Elem/High School	APO	AE	USA
13286	SHAPE HS Spartans	Shape High School	APO	AE	USA
13338	Naples MHS FTC	Naples High School	FPO	AE	USA

Figure 34 – Select teams and then click on “Done” to add them.

12.7.3. Importing a List of Teams

You can use the Add/Edit Team page to add teams by selecting and uploading a team list file.

- The system can read team list files from past FIRST Tech Challenge seasons (prior to 2018-2019).
- An event administrator can also create a simple text file with a team number on each line of the file and use that as a team list.
- Press “Choose File” and use the pop-up file browser to find and select your team list file.
- After you have selected the team list file, press the “Upload Team List” button to upload the list data.

Done

Full Name

Choose File CT Teams.xlsx

Upload Team List

Rookie Year	Advanced	Division	Edit
2013		0	

Figure 35 - Use the "Choose File" and "Upload Team List" buttons to select and upload a team list.

The uploaded teams should now be included in the team list for the currently selected event.

12.7.4. Editing Existing Teams

Select the “Add/Edit Team” button on the Event Dashboard, and then use the “Add Individually” tab to edit the team. When you are finished editing teams, press the “Done” button to leave the Add/Edit Team screen.

12.8. Adding/Editing Sponsors for an Event

The software comes populated with the following sponsors:

- FIRST Tech Challenge Presenting Sponsor: Qualcomm
- FIRST Tech Challenge Official Program Sponsor: Rockwell Collins
- FIRST Tech Challenge Official 3D Augmented Reality/Virtual Reality Sponsor: PTC

These sponsors cannot be modified and need to be displayed at every event. In addition to the above sponsors, you may add regional or event sponsors.

Click on the Add/Edit Sponsors to create or edit a sponsor list for your event.

Name	Level	Logo	Action
FTC	Event		<button>Add</button> <button>Edit</button> <button>Delete</button>

Figure 36 - You can add/edit sponsors for an event.

- Press the “Add” button to add a new sponsor for an event.

Figure 37 - When you add/edit a sponsor, you should specify the sponsor's name and level of support.

- Enter the name of the sponsor.
- Select the type of sponsor (Global, Regional, or Event).
- Click on the “Create Sponsor” button to create the new sponsor.

- From the main Add/Edit Sponsors screen, you can also use the “Choose File” and “Import Sponsor Data” buttons to import a sponsor data file.

Sponsor information can be displayed on Audience Displays by using the “Video Switch” tab of the Match Control Page (for details, see the section “How to Display Sponsor Information”).

12.9. Creating the Match Schedule

If you have a list of at least four teams for your event, you can generate the match schedule. On the Event Dashboard, select the Create Match Schedule .

The screenshot shows the 'Create Match Schedule' interface. At the top, there's a header with the FIRST Tech Challenge logo, 'Event Admin', and 'Feedback Hello, local'. Below the header, there are input fields for 'Matches per Team' (set to 5) and 'Cycle Time (min)' (set to 7), with a 'Default' button highlighted by a red oval. Below these are labels for 'Total Matches Required: 10'. The main area is titled 'Schedule:' and contains a block for a single match: 'Start Time 2018/10/04 10:42', '# Matches: 10', and 'End Time 2018/10/04 11:52'. There are buttons for 'Add Match Block' and 'Add Break'. At the bottom, it says 'Total Matches Scheduled: 10 / 10' and has 'Save', 'Preview', and 'Run Matchmaker' buttons.

Figure 38 - Create Match Schedule main screen.

- You can edit the “Matches per Team” field (within the limitations set by the system) to adjust how many matches per team will be scheduled.
- You can edit the “Cycle Time” field to adjust the desired target cycle time for a match.
- You can press the “Default” button to use the default parameters to generate a simple match list (no match blocks or breaks included).
- You also have the option to create a more complex match schedule, with blocks of matches and breaks inserted in between.
 - Press the “Add Match Block” button to add a block of matches to the schedule.
 - Press the “Add Break” button to add a break in between matches to the schedule.
 - Adjust the start and end times for the blocks and breaks and provide labels (such as “lunch”, “morning”) for the breaks.

Schedule:

Start Time	2018/10/04 11:00	<input type="button" value="Remove"/>
# Matches:	5	
End Time	2018/10/04 11:35	
Label	lunch	<input type="button" value="Remove"/>
Start Time	2018/10/04 11:35	
Duration (min):	60	
End Time	2018/10/04 12:35	
Start Time	2018/10/04 12:35	<input type="button" value="Remove"/>
# Matches:	5	
End Time	2018/10/04 13:10	
<input type="button" value="Add Match Block"/> <input type="button" value="Add Break"/>		

Total Matches Scheduled: 10 / 10

Figure 39 - You can create a more complex match list by adding breaks and blocks to the schedule.

- Once you configured your match blocks and breaks, you can push the “Run Matchmaker” button to run Idle Loop’s [Matchmaker](#) software. A progress bar should appear with an estimate on how much time to generate the schedule.

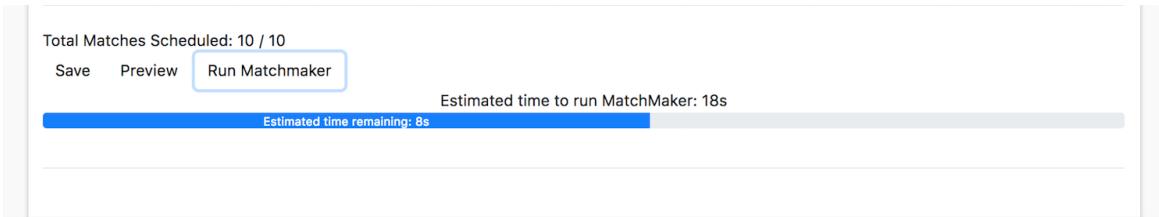


Figure 40 - Push the Run Matchmaker button to generate the match list for your event.

- Once the match list has been generated, it will appear towards the bottom of the screen. There is an option to display or hide the suggested match times for the schedule. By default, the match times are hidden.
- After you have reviewed the match schedule, you can use the “<< Back to Dashboard” link to return to the Event Dashboard.

Start Time Condensed

NH State Championship Schedule

Teams: 7		Matches Per Team: 5		Matches: 9	
Match	Field	Red 1	Red 2	Blue 1	Blue 2
Qualification 1	1	10939	4130	10941	10940
5 minute break for consecutive match per <T14>					
Qualification 2	2	10938	10937	8888	10939
5 minute break for consecutive match per <T14>					
Qualification 3	1	4130	10941	10938	8888
5 minute break for consecutive match per <T14>					
Qualification 4	2	10938	10940	10937	4130
5 minute break for consecutive match per <T14>					
Qualification 5	1	10937*	8888	10941	10939
5 minute break for consecutive match per <T14>					
Qualification 6	2	10940	4130	10937	10941
5 minute break for consecutive match per <T14>					
Qualification 7	1	10940	8888	10939	10938
5 minute break for consecutive match per <T14>					
Qualification 8	2	10937	10939	4130	10938
5 minute break for consecutive match per <T14>					

Figure 41 - The generated match schedule will appear towards the bottom of the screen.

12.10. Uploading Event Data to FIRST

On the Event Dashboard, select the Send Results to FIRST button:

nh1 Dashboard Scrimmage		
Step	Action	Status
1	Edit Event	Done
2	Create Default Accounts	Not Started
3	Add/Edit Teams	0 teams added
4	Add/Edit Sponsors	0 sponsors added
5	Configure Judging/Inspection Tracking (Optional)	(Optional)
6	Create Judging/Inspection Schedule (Optional)	Not Started
7	Create Match Schedule	Not Started
8	Manage Awards	
9	Advancement Report	
10	Send Results to FIRST	
11	Download Archive File	

Figure 42 - Dashboard with Send Results button.

Opens the Send Results to FIRST page, select Submit Results.

FIRST Tech Challenge Live v1.0.0 running at: 103.2.24.18.0.8080

[Event Admin ▾](#)

[Resources](#) [Feedback](#) [Hello, local](#)

[**<< Back to Dashboard**](#)

Send Results to FIRST

Please submit results from all official events, including League Meets. Internet Access is required. If no internet is currently available, it can be done later. Before submitting an event, please confirm all edits to the event are complete, and the data is ready to become public. Resubmissions for edited data are not allowed.

Submit Results

Figure 43 - Press the Submit Results button.

Successful submit will give a Submission ID. If you need to report any issues or bugs to Github, please include this number.

Note: Once you submit, an event cannot be resubmitted. So make sure the event is complete and all data is saved and correct.

[**<< Back to Dashboard**](#)

Send Results to FIRST

Upload Completed. Thank You!

Submission ID: 627008685465534464

If you submit any bug reports about something that occurred during this event on the GitHub issue tracker, please include this number. Do not delete any data associated with the scoring system as we may request logs or other data to follow-up on your report. Thank you!

Figure 44 - Successful submission will give a Submission ID

If you skipped the Setup Event step, it will prompt you for a key now. It is required for this step.

[**<< Back to Dashboard**](#)

Send Results to FIRST

Please submit results from all official events, including League Meets. Internet Access is required. If no internet is currently available, it can be done later. Before submitting an event, please confirm all edits to the event are complete, and the data is ready to become public. Resubmissions for edited data are not allowed.

Region Key

Submit Results

Figure 45 -Copy/Paste the region key.

If the key is invalid, it will alert you and you will need to re-enter the key to make sure it is correct.

The screenshot shows a web page titled "Send Results to FIRST". At the top left is a link "« Back to Dashboard". The main content area has a heading "Send Results to FIRST". Below it is a note: "Please submit results from all official events, including League Meets. Internet Access is required. If no internet is currently available, it can be done later. Before submitting an event, please confirm all edits to the event are complete, and the data is ready to become public. Resubmissions for edited data are not allowed." A "Region Key" input field contains the value "USNH00-XXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX". Below the input field is a "Submit Results" button. Underneath the button, the text "Invalid Authentication Key" is displayed in red.

Figure 46 - Invalid region key

13. Match Control and Scoring

If you successfully created a match schedule for your event, then you are ready to begin controlling (initializing, running, and scoring) the matches.

13.1. Example Scoring Workflows

Before examining the details of the Match Control features that are available with the system, it is helpful to look at the workflow for scoring an event.

13.1.1. Scoring Using Paper Scoresheets

The system can be used with [paper scoresheets](#) to control and score an event. For this scenario, the typical workflow is:

- Load Match
- Show Match Preview
- Randomize Field
- Run Match
- Manually Enter Scores (using a “Forced Edit” of the results)
- Commit Results
- Display Results

13.1.2. Scoring Using Wireless Tablets

Wireless tablets can be used for [real-time score tracking](#):

- Load Match
- Show Match Preview
- Referees Submit Pre-Match Info
- Randomize Field
- Run Match
 - Referees track then submit Autonomous
 - Referees track then submit Driver-Controlled
 - Referees review then finalize their scores
- Commit Results

- Display Results

13.2. Event Home Page

You can navigate to the Event Home Page from the Event Dashboard by clicking on the “<< Back to Event Home” link that is in the upper left-hand corner of the screen. Depending on your user account permissions, the home page will display categorized lists of features that are available from the server:

- Event Info – These links display important event-related information. A scorekeeper can review and print out information such as the match schedule, team rankings, and match results using these links. Also, a pit display can be launched from a link in this category.
- Score Tracking – A referee would use these links to score for the red or blue alliance.
- Event Administration – These links take the user to the Event Dashboard, the Match Control page, and to the various public display screens.

nhchampionship2019: NH State Championship

Event Info

- [Judging & Inspection Schedule](#)
- [Judging & Inspection Status](#)
- [Match Schedule](#)
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- [Blue Alliance Score Tracking](#)

Displays

- [Scoring/Timing Displays](#)

Event Administration

- [Event Dashboard](#)
- [Match Control Page](#)

Figure 47 - Event Home page.

13.3. Match Control Page

Click on the “Match Control Page” link to display the Match Control Page.

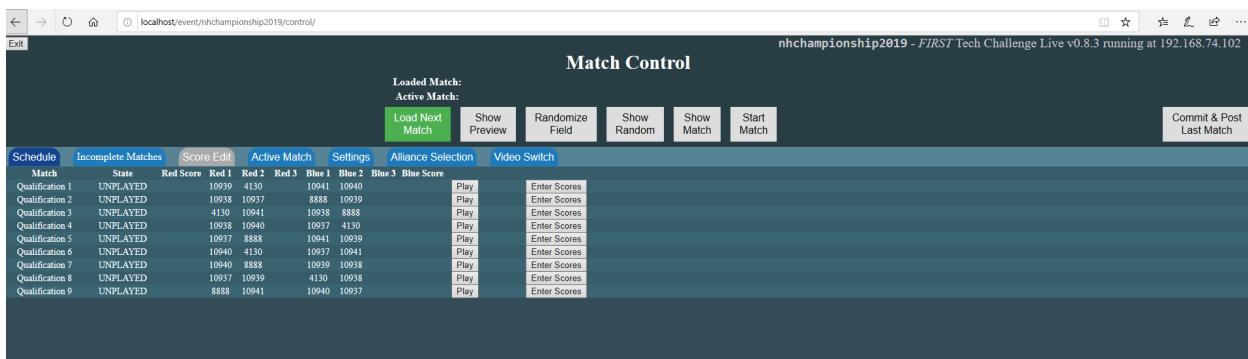


Figure 48 - Match Control Page

The Match Control Page is where the scorekeeper will spend most of their time. It is where the match timer is controlled, as well as, where scores are edited. It is recommended that the Match Control Page be used in full screen mode, and that the user not navigate away from the Match Control Page’s browser tab. If the user would like to have two or more active browser screens on their laptop (for example, if the user wanted to display the match control page and the field display page), it is recommended that user have two separate browser windows (and not two browser tabs within the same window) launched on their computer.

Important Note: Only one Match Control Page should be open per scoring server per event. More than one Match Control Page can result in confusion and inaccurate and unpredictable match results.



Figure 49 - Loaded Match and Active Match information.

At the very top of the Match Control Page, lists information about the current “Loaded Match” and the current “Active Match”.

- Loaded Match is the next match to be played. The alliance lists turn green once the referee has submitted initialization data for that alliance. When both are green, the match start button turns green to allow for match start.
- Active Match shows the match currently in progress and the time left. The buttons progress through the match flow, generally from left to right. Green buttons indicate the next steps, yellow buttons indicate repeated actions (that are allowed), and red buttons indicate non-standard match flow operations, but are still allowed. Grey buttons cannot be used at the time.

13.3.1. Match Control Buttons

The buttons on the Match Control Page below Loaded and Active Match, allow for the control of the match flow.

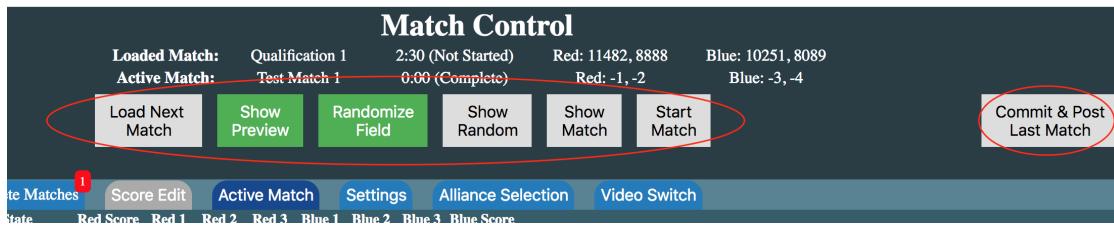


Figure 50 - Buttons allow for control of the match flow.

- Load Next Match - This button will load the next match in the schedule for play, allowing referees to input initialization data and allowing randomization of the field. To load a different match, use the Play / Replay button on the schedule tab. If no matches exist, button does nothing.
- Show Preview - Audience Displays will show the list of teams competing in the next match, and their current rank.
- Randomize Field - This will generate a random number to use to configure the field before the match. If external randomization is enabled in settings, a tooltip will appear below the button to allow selection of a value. Clicking again will prompt for confirmation, but will allow re-randomization.
- Show Randomization - This will show the randomization value and corresponding field state on Audience Displays.
- Show Match - This prepares the displays for match start by showing the screen used during a match.
- Start Match - Starts the match. This button is not available until after the field has been randomized. It is red until both referees have submitted initialization, but can still be clicked when red. After match start, it turns into an “Abort Match” button, which is used to reset the match timer. After an abort, the match returns to the waiting for init stage, and referees must refresh their pages and re-submit initialization before the start button turns green again.
- Commit & Post Last Match- This is a convenient button that is available once the previous match’s scores have been submitted by referees, and the next match has not yet started. It will both save the results of the previous match, and show them on screen. This button should only be used after confirmation signal from the head referee that all data as entered by the referees is correct and no cards need to be given. Otherwise, matches can be edited, committed, and posted from the schedule tab /edit scores tab.

13.3.2. Match Control Tabs

The Match Control Page has several tabs that can be used to switch the information displayed on the screen:

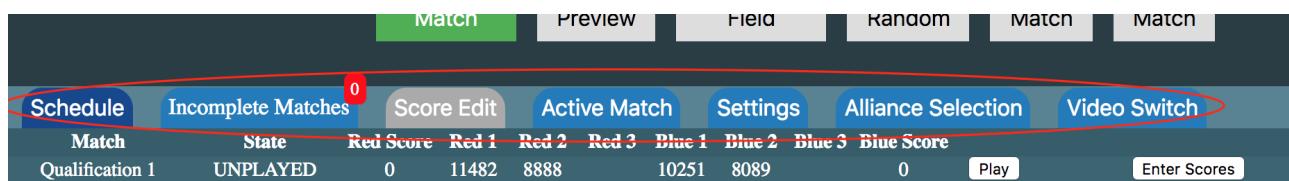


Figure 51 - Each tab changes the information displayed on the screen.

- Schedule - Shows list of matches, their status, teams, and scores. From this tab, which match to play can be selected, and matches can be selected to edit or show results.
- Incomplete Matches - Shows the matches that have **been started but not completed** (committed to the database).
- Score Edit - Used to edit scores or enter CARDs. Click **Edit** on a match in the schedule tab to load this tab.

- Active Match - Shows the live scoring state of the match currently being played, or the last one played. Looks like score edit tab but cannot be edited. After a match is complete, it provides a button to edit scores.
- Settings - Allows for configuration and loading of test matches.
- Video Switch - Used to show sponsors, bracket, audience key, wifi reminder, ranks, and blank screen.

13.3.3. How to Display Sponsor Information

You can display the list of sponsors on an Audience Display using the tabs that are available on the Match Control screen.

1. Select the Video Switch tab, then the “Show Sponsors” button.

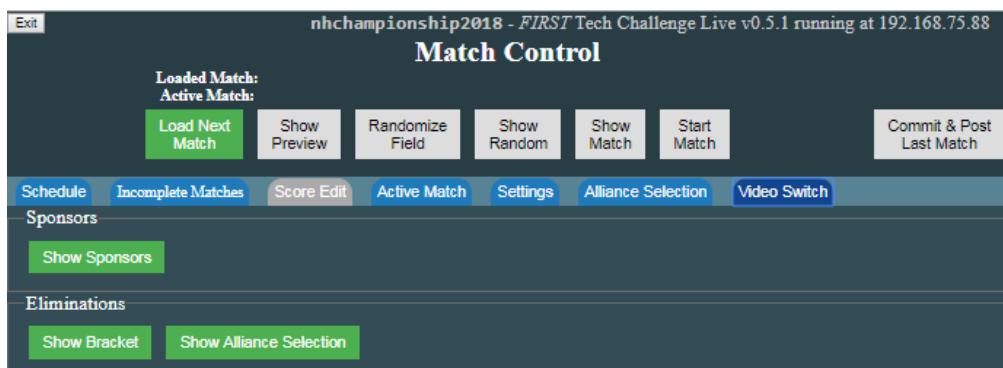


Figure 52 - Click on the "Show Sponsors" button to display the sponsor information on Audience Displays.

2. Select “Show Sponsors” button to display the sponsor information on the Audience Displays at your event.
3. The Audience Displays should automatically begin displaying the sponsors for your event.



Figure 53 - The Audience Displays with sponsor information.

13.4. Scoring/Timing Displays

A laptop or computer that is connected to the same network as the system server can be used to display scoring and timing information:

- Field Display – The Field Display provides basic match and timing information for the teams and volunteers on an active competition field. If live scoring is enable, it also provides live score information.

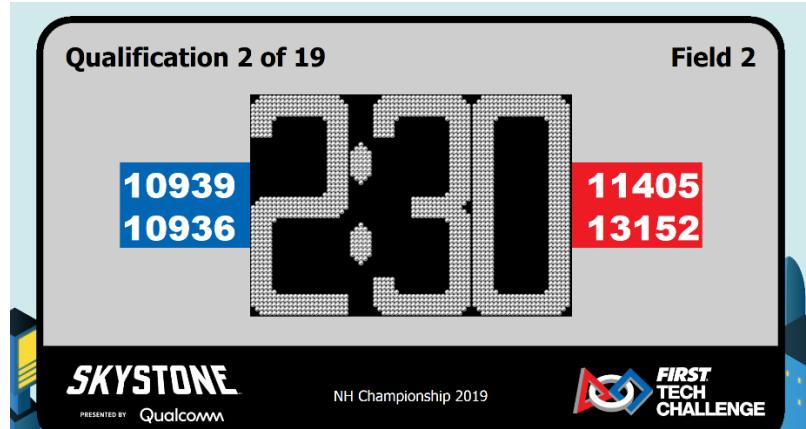


Figure 54 - Field Display

- Audience Display – The Audience Display provides match and timing information, formatted for spectators. If live scoring is enabled, it also provides score information including a graphical representation of the state of the field during a match. When the results of a match have been committed and posted, the results information should display on the audience displays.

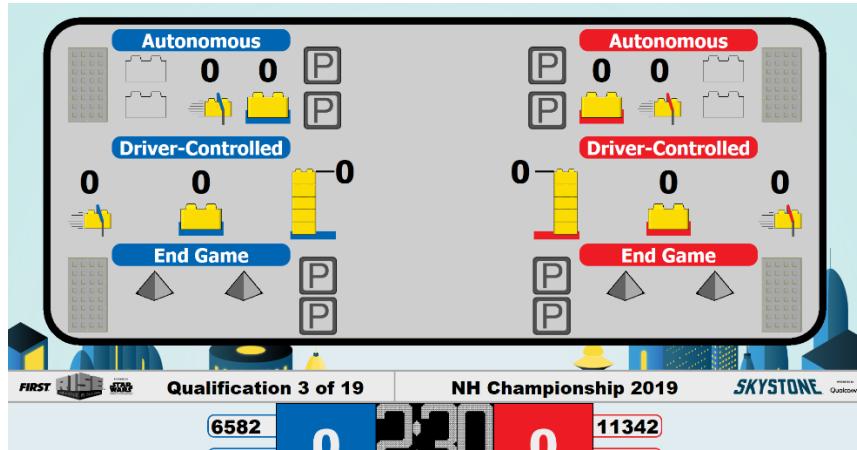
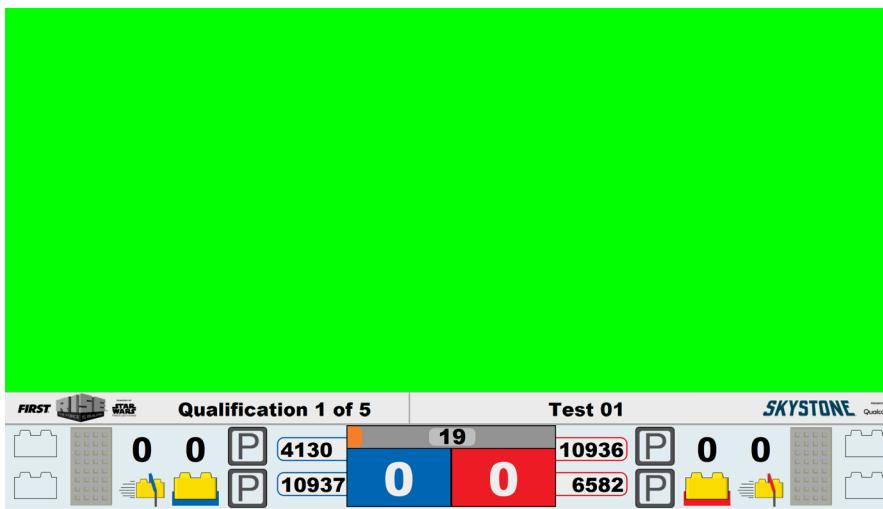


Figure 55 - Audience Display.

- Overlay Display – The Overlay Display mode is similar to the Audience Display but has a season specific screen. The blank portion of the screen is where a video feed (typically live camera footage of the match) can be overlaid onto the screen using chroma key technology.

*Figure 56 - Overlay Display mode.*

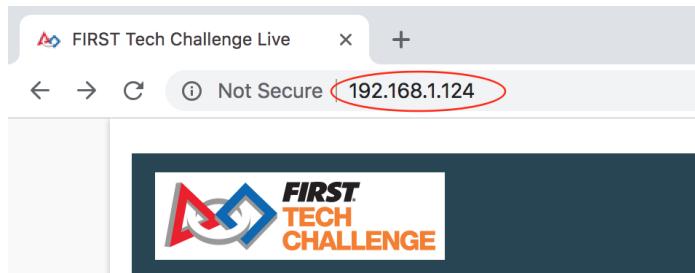
You can have multiple devices acting as Field or Audience Displays on your network. It is strongly recommended that these devices are connected to the server through a wired (Ethernet) network to avoid interfering with the wireless control systems of the robots. Or, if a wired connection is not convenient, a wireless connection can be used, but it should be configured so that it operates on a Wi-Fi channel that will not conflict with the wireless control systems of the robots.

13.4.1. Setting up a Display

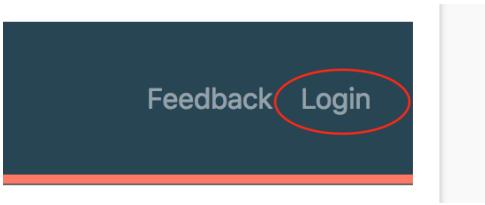
By default, the Scoring/Timing Displays are private and not accessible without an authorized user account. Currently a user account requires Event Admin privilege to be able to display the Scoring/Timing information.

Before you can set up a Field or Audience Display, you will need:

- Verify that you have the IP address of the system server.
- Verify that you have a valid user id and password that can access the Scoring/Timing feature.
- Launch the Google Chrome browser on your display computer.
- Typing in the IP address to navigate to the system server.

*Figure 57 - Type in the IP address to navigate to your system server.*

- “Login” link in the upper right-hand corner.



- A listing of available events. Click on the event that you want to track in the Field or Audience Display.
- In the Event Home page for your selected event, click on the “Scoring/Timing Displays” link (currently located under the “Event Administration” category).

nhchampionship2019: NH State Championship

Event Info

- [Judging & Inspection Schedule](#)
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- [Blue Alliance Score Tracking](#)

Displays

- [Scoring/Timing Displays](#)

Event Administration

- [Event Dashboard](#)
- [Match Control Page](#)

Figure 58 - Scoring/Timing Display in Event Admin..

- On first load, the Display Page will appear with a settings dialog open. The settings dialog allows you to choose a display type (Audience, Field, Overlay), as well as binding the display to a field. Note that after you close the settings dialog, can re-open it by clicking anywhere on the page while holding down the CTRL key.

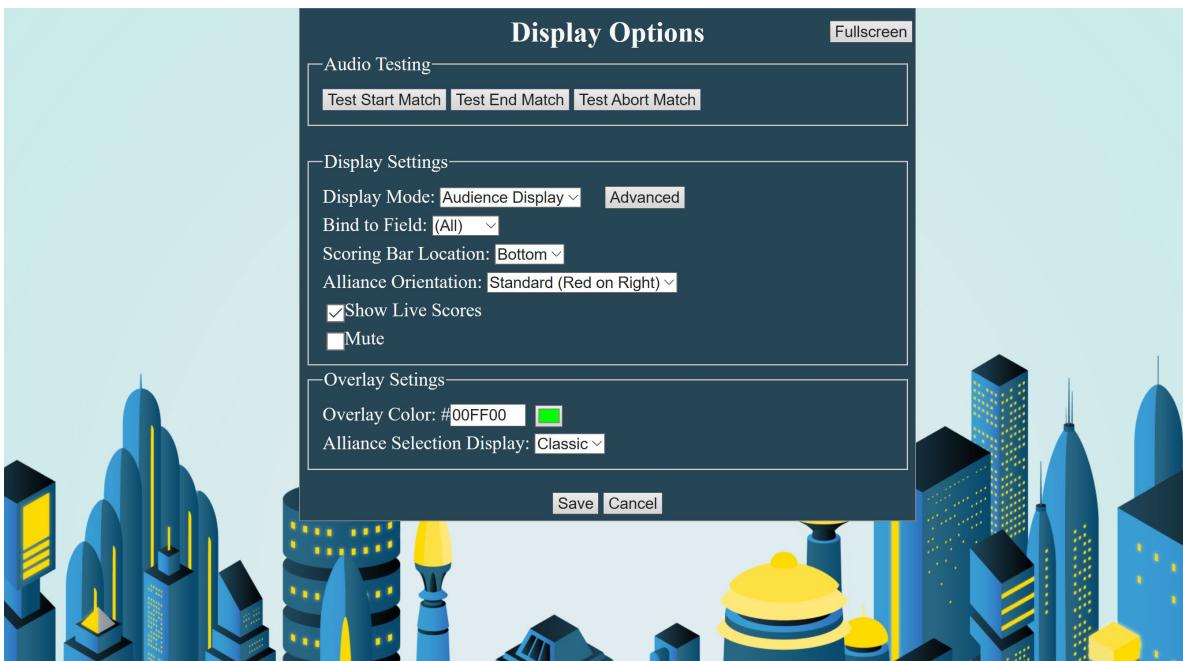


Figure 59 - Display Settings Dialog.

- The “Audio Testing” buttons at the top can be used to play the game audio cues to test the PA system.
- Select the Display Mode for the computer you are configuring.
- If you bind the display to a field, then it will only show events for the specified field.
- If you do not use real-time score tracking, disable the “Show Live Scores” option.
- Displays must be shown in full screen. After changing to full screen, refresh the page to ensure it is properly displayed.
- Google Chrome is recommended. Firefox is NOT supported and will not work with the display screens.

Test that Scoring/Timing Displays update automatically as the scorekeeper changes the state of the active event.

13.5. Scoring Using Paper Scoresheets

The system supports scorekeeping using paper scoresheets and a very basic system configuration (see Figure 3 on page 13). This configuration has a single laptop that functions as the scoring system server, the Match Control laptop, and as the Audience Display. Referees use paper sheets to score the matches. After a match is complete, the scorekeeper manually enters the values through the Match Control page.

13.5.1. Configuring the Audience Display

On the laptop, the scorekeeper should have two browser windows opened. One window should display the Match Control screen. The other window should be configured as an Audience Display with the “Show Live Scores” option disabled (see image below). Both browser windows should be logged in as the “local” user.

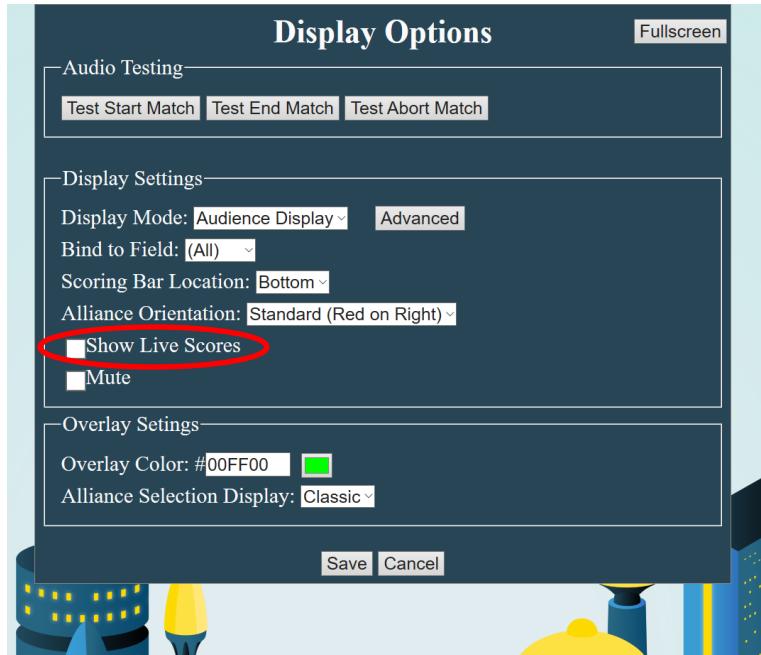


Figure 60 - Make sure the "Show Live Scores" option is disabled (unchecked).

If the “Show Live Scores” option is disabled, then the Audience Display will only display match and timing information. No real-time scores will be displayed.

Note: The Audience Display browser window should be maximized in the externally connected HDMI monitor so that the teams and audience can see the timing and match information clearly.

13.5.2. Step-by-Step Example: Scoring with Paper sheets

- Scorekeeper selects the match that he/she wants to score and pushes the “Play” button that appears next to its listing on the Match Control Page (or the Scorekeeper pushes “Load Next Match” if the next match in the schedule is to be played). The match should be listed as the “Loaded Match” near the top of the Match Control screen.

The screenshot shows the 'Match Control' page with the following details: Loaded Match: Qualification 3, 2:30 (Not Started), Red: 11103, 8089, Blue: 10251, 7804. Active Match: Qualification 3. Buttons: Load Next Match (circled in red), Show Preview, Randomize Field, Show Random, Show Match, Start Match, Commit & Post Last Match. Below is a table of the Match Schedule:

Schedule	Incomplete Matches	Score Edit	Active Match	Settings	Alliance Selection	Video Switch						
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Replay	Post	Edit
Qualification 1	COMMITTED	325	11482	8888		10251	8089		340	Replay	Post	Edit
Qualification 2	COMMITTED	0	7135	10660		7804	11103		0	Replay	Post	Edit
Qualification 3	UNPLAYED		11103	8089		10251	7804			Play		Enter Scores
Qualification 4	UNPLAYED		8888	10660		11482	7135			Play		Enter Scores
Qualification 5	UNPLAYED		11103	11482		8089	7135			Play		Enter Scores
Qualification 6	UNPLAYED		10660	10251		7804	8888			Play		Enter Scores
Qualification 7	UNPLAYED		10251	7135		10660	8089			Play		Enter Scores
Qualification 8	UNPLAYED		7804	11482		11103	8888			Play		Enter Scores
Qualification 9	UNPLAYED		8888	10251		7135	11103			Play		Enter Scores
Qualification 10	UNPLAYED		8089	7804		10660	11482			Play		Enter Scores

Figure 61 - Press “Load Next Match” or “Play” button to load a match. It will be listed as the “Loaded Match” near the top.

- The scorekeeper presses the “Show Preview” button on the Match Control Page. This should force the Audience Displays to display information about the upcoming match.

Note: On the Match Control Page the “Show Preview” button should change from green to yellow after the button has been pressed.

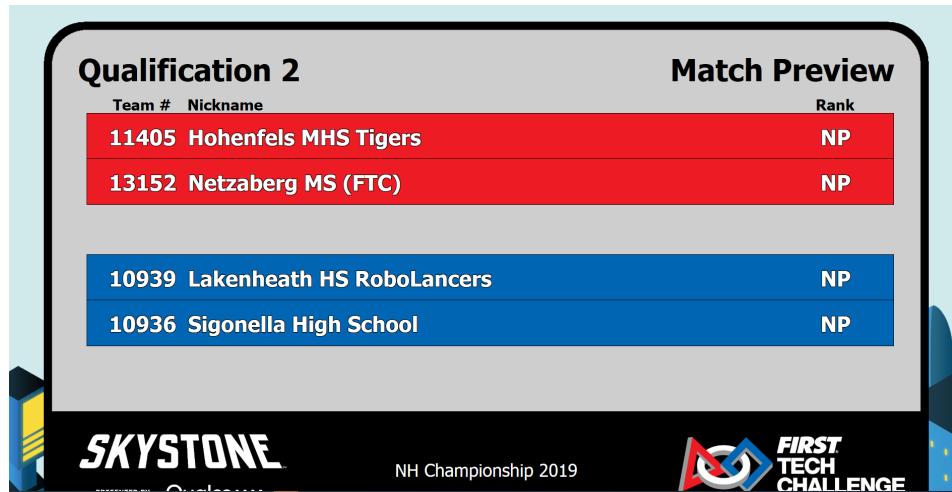


Figure 62 - The Audience Display should display match info after the "Show Preview" button has been pressed.

3. Select the Randomize Field button on the Match Control page or the referees can roll a physical die and use the result to determine how to place the game elements for the autonomous phase.

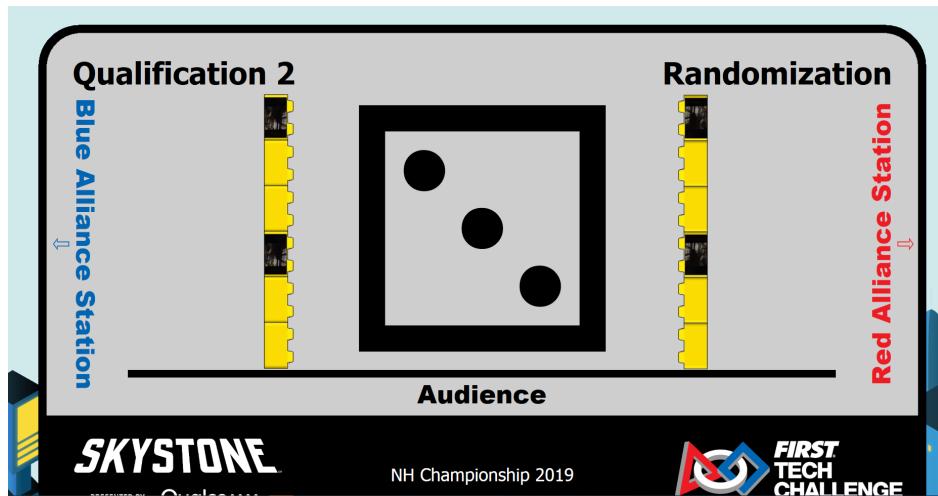


Figure 63 – After the “Show Random” button has been pressed, the Audience Display will show randomization info.

4. The scorekeeper can push the “Show Match” button to show the match information, which for this scenario will include the alliance team numbers and the match clock.

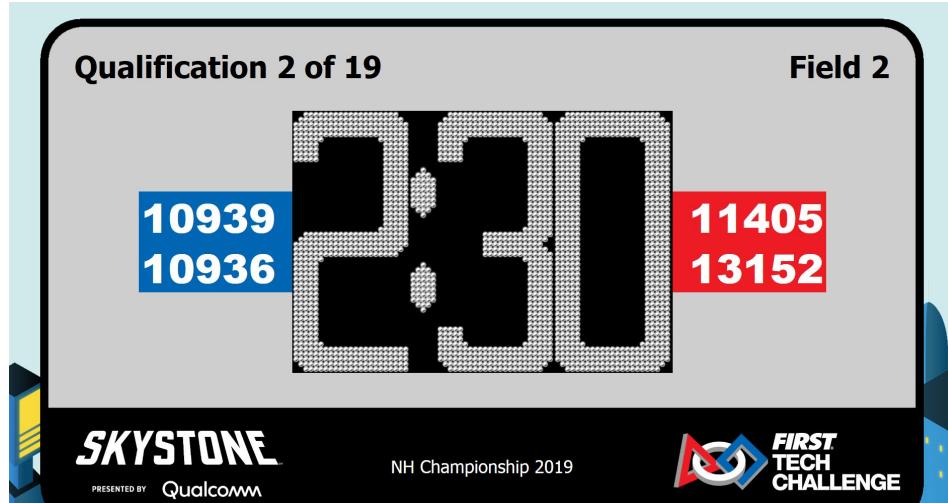


Figure 64 - Pushing the "Show Match" button will display the Match information and timer on the Audience Display.

5. The scorekeeper pushes the “Start Match” to run the match.

Note: The “Start Match” button might be colored red. This is because it is “waiting” for pre-match information from a score tracking tablet. Since this scenario does not involve live score tracking, you can disregard the color of the button.



Figure 65 - Push the “Start Match” button.

6. After the match begins, the Audience Display should play the audio cue indicating that the match has begun and the countdown timer on the display should be active.

Note: that the scorekeeper has the option to abort the match by pushing the “Abort Match” button while the match is active.

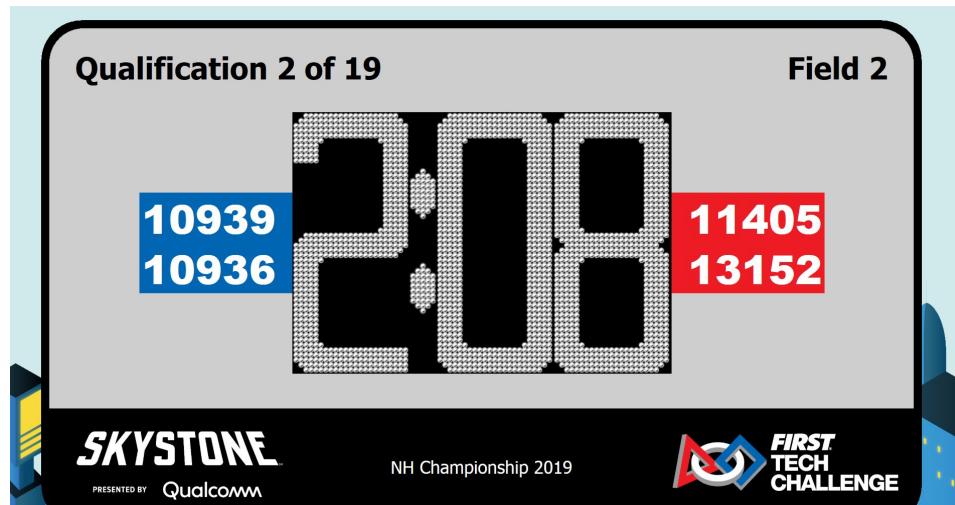


Figure 66 - The audio cue should play and the timer should start counting down at the start of the match.

- After the match is complete, the scorekeeper collects the paper scoresheets from the referees and then pushes the “Active Match” tab on the Match Control screen. This will bring up the electronic version of the scoresheets on the Match Control screen.

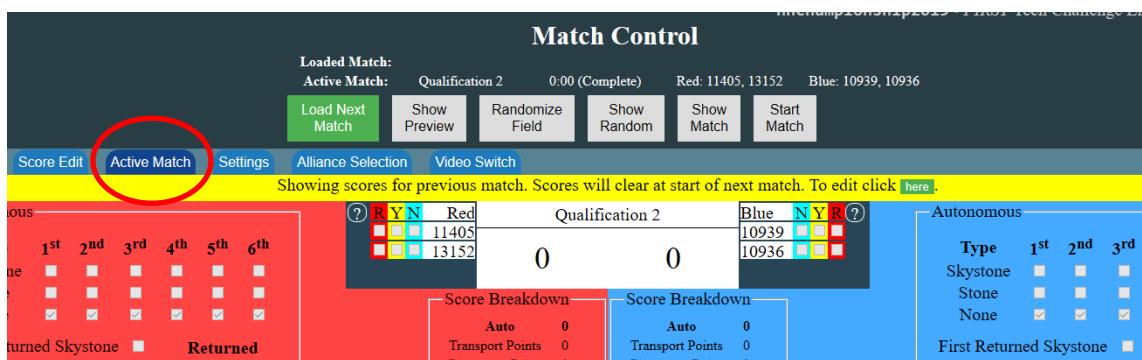


Figure 67 - Press the "Active Match" tab to display the electronic version of the scoresheets.

- Under the “Active Match” tab, the scorekeeper should push the green button with the label “here” to edit of the scoresheets manually.

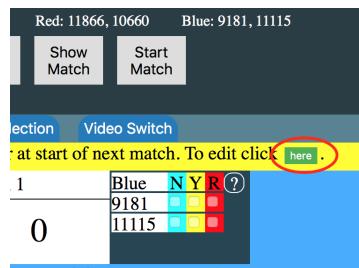


Figure 68 - Click on the "here" button of the phrase "To edit click here" to edit the scores.

9. When prompted, click on the “Force Edit” to force the edit to occur.

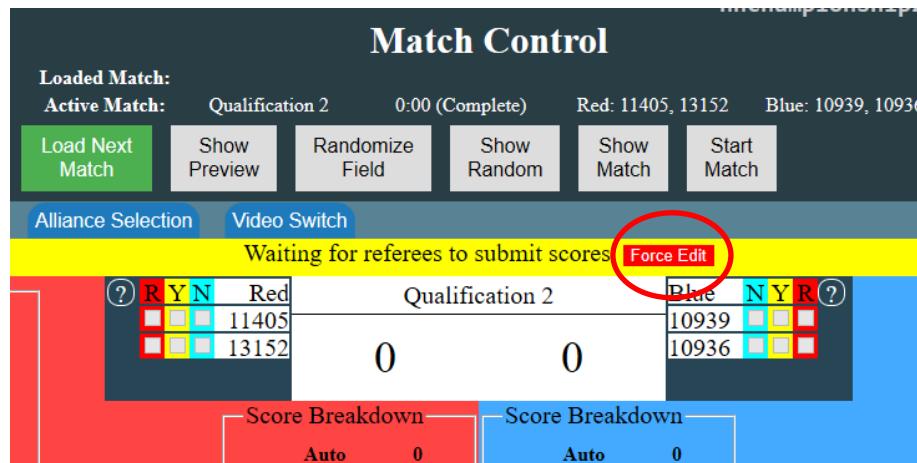


Figure 69 - Click "Force Edit" button to force an edit of the scores.

10. If prompted, click “Yes” to override the referees. It is OK to click “Yes” since real-time scores were not tracked for this match.



Figure 70 - Hit "Yes" to override the referees and enter the scores manually.

11. The scorekeeper should manually enter in the score values through the Match Control page. The scorekeeper should then press “Save Edits” and then “Commit” (or just “Commit”) and the scores will be committed to the system.

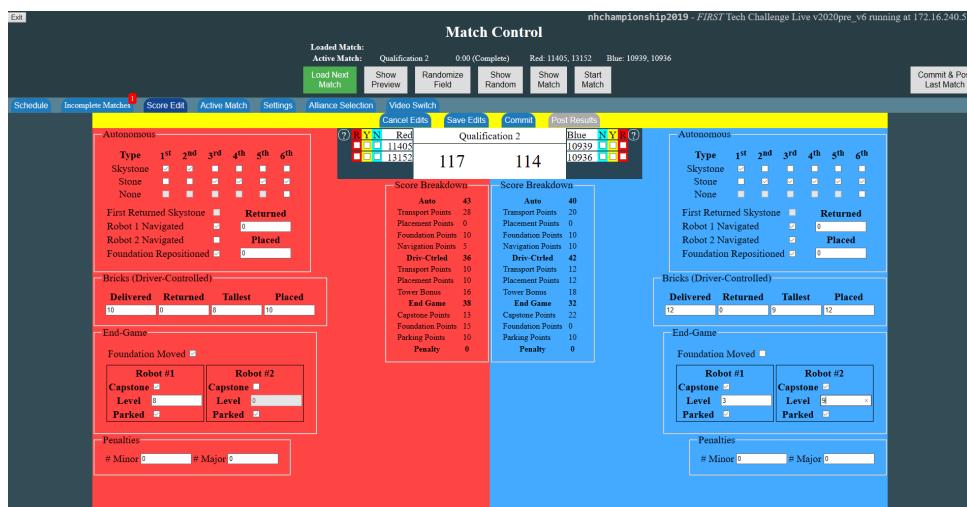


Figure 71 - The scorekeeper should edit the scores, then push the "Commit" button to commit them to the system.

12. The scorekeeper should then press the “Schedule” tab to return to the match schedule, and then press the “Post” button next to the match to display the match results on the audience display.

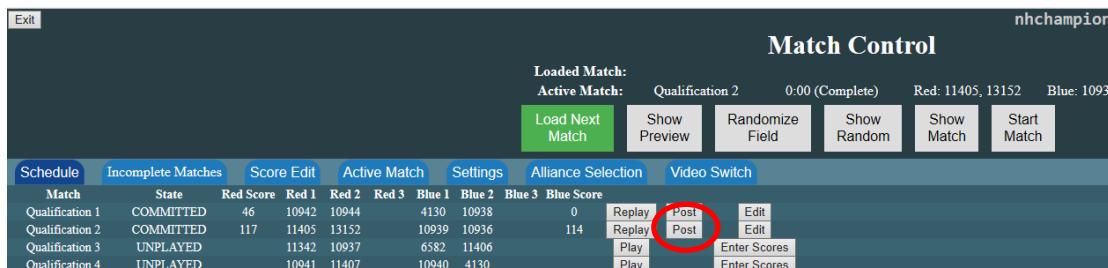


Figure 72 - Press the "Post" button next to the match to display the Match results to the Audience Display.

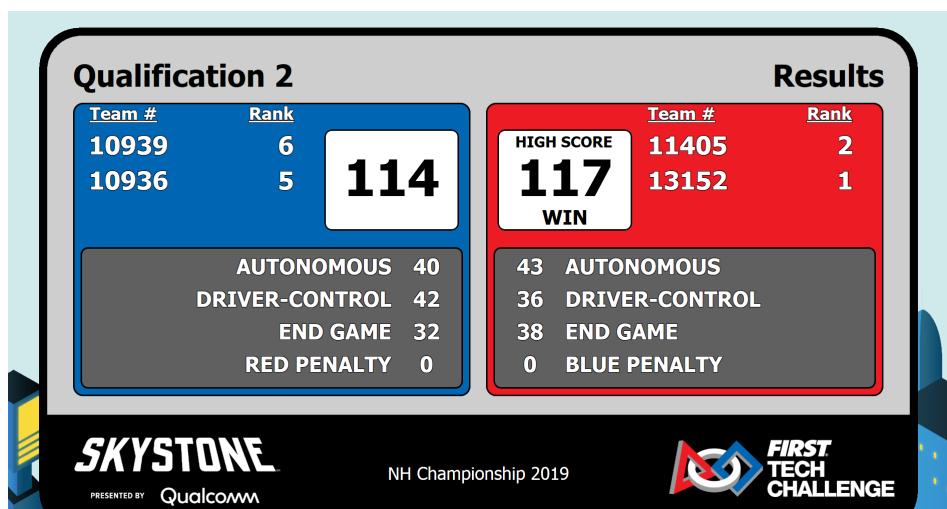


Figure 73 - The Audience Display should show the match results.

13. The scorekeeper can repeat the process for subsequent matches.

13.6. Live Score Tracking Using a Tablet

13.6.1. Connecting a Tablet to the Server

A tablet running Google Chrome can be used to manually track scores during a match. Before you can begin live score tracking, you will need to know the IP address of the computer that is running the system server. You also will need a user id and password that has referee (i.e., score tracking) permission for the event.

Also note that if you implement live score tracking using a pair of wireless tablets, make sure the operating Wi-Fi channel for the score tracking tablets will not conflict with the wireless control system of the robots.

To connect to the server, use the following steps:

- Verify that the tablet is connected to the same network as the scoring system server.
- Launch the Google Chrome browser on the tablet and type in the IP address into the Chrome address/navigation bar to navigate to the scoring system server.

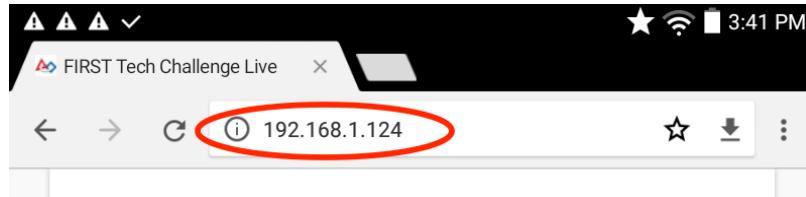


Figure 74 - Type in the IP address (which you can get from your IT admin) of the server in the browser's address bar.

- If you successfully connect to the scoresystemserver, you will see the system home page. Click on the upper righthand menu icon to display the menu options for the home page. The “Feedback” and “Login” links should appear towards the top of the screen.

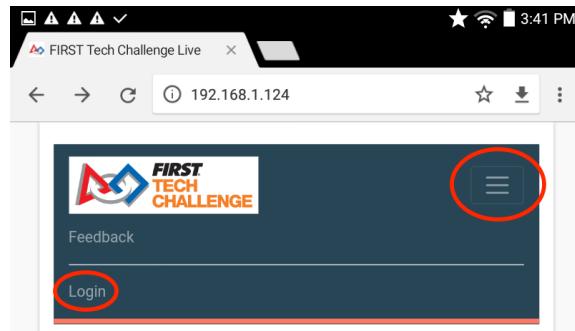


Figure 75 - Click on upper right hand menu icon to display the "Feedback" and "Login" menu options.

- Click on the “Login” link and follow the onscreen instructions to login to the appropriate user account.
- If you have successfully logged in, you should see the Home page with a listing of all the active events in the system. Click on the event that you want to score.

nhchampionship2019	New State Champions hip	Setup	02/16/2019
gl01	Granite League	Setup	10/20/2018

Figure 76 - Find your event on the system home page and select it.

- On the Event Home page, click on the appropriate Score Tracking link (Red Alliance or Blue Alliance).

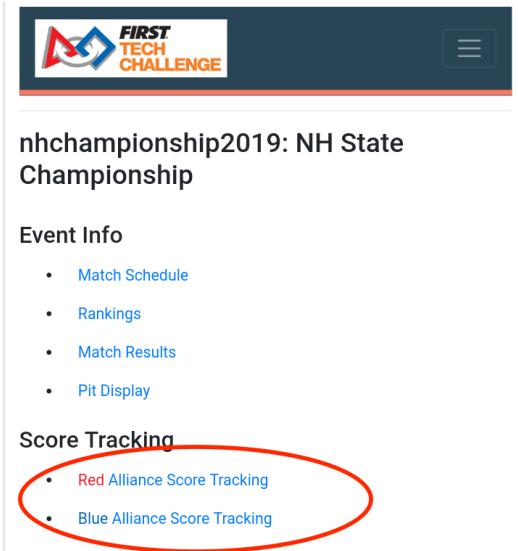


Figure 77 - Red or Blue Alliance link.

- If prompted, select a field if you want to bind the tablet to a specific field or select “All Matches” if you would like to use this tablet to score all matches for this event.

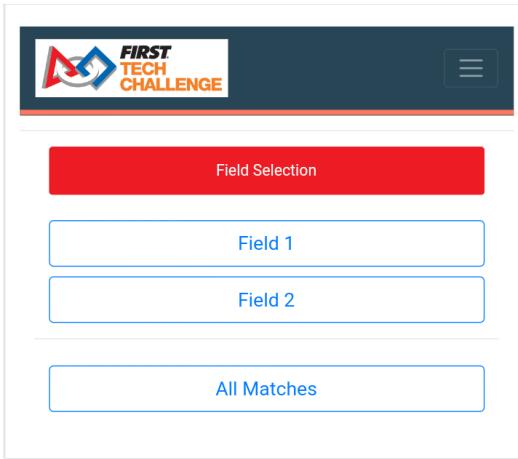


Figure 78 - Select a field if you want to bind tablet to a specific field, or select "All Matches" to score all matches with this tablet.

- If there are no active matches yet, the tablet will display the following message. You will have to wait for the scorekeeper to prepare a match to play before the screen will change.

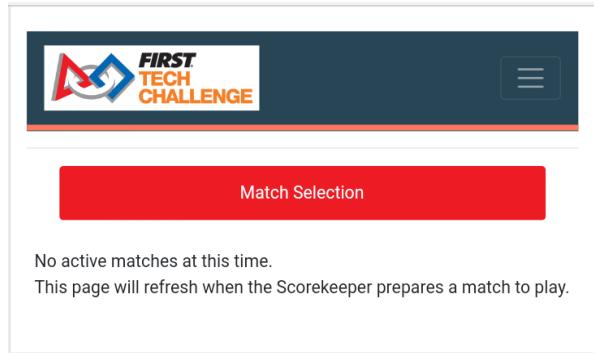


Figure 79 - If there are no active matches, then this message will appear.

13.6.2. Step-by-Step Example: Scoring an Event with Wireless Tablets

In this section, we will go step-by-step through the process of scoring an event using wireless tablets for real-time score tracking. Scorekeeper is logged into the system with Event Admin privileges and has a browser window displaying the Match Control page for the selected event. The referees who are score tracking for the event have connected their respective tablets to the server and are logged in with score tracking access. We also assume that there is a Field Display computer and an Audience Display computer and these devices are properly configured and connected to the server.

- Scorekeeper selects the match that he/she wants to score and pushes the “Play” button that appears next to its listing on the Match Control Page (or the Scorekeeper pushes “Load Next Match” if the next match in the schedule is to be played). The match should be listed as the “Loaded Match” near the top of the Match Control screen.

The screenshot shows the Match Control page for the "nhchampionship2019" event. At the top, there are buttons for "Exit", "Match Control", and "Show Preview". Below these are buttons for "Randomize Field", "Show Random", and "Start Match". A large "Load Next Match" button is highlighted with a red circle. To its right, a row of buttons for different qualification matches is shown, with the "Play" button for Qualification 3 circled in red. The table below lists the qualification matches with their current state, scores, and various control buttons like Replay, Post, and Edit.

Schedule	Incomplete Matches	Score Edit	Active Match	Settings	Alliance Selection	Video Switch						
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Replay	Post	Edit
Qualification 1	COMMITTED	46	10942	10944		4130	10938	0	114	Replay	Post	Edit
Qualification 2	COMMITTED	117	11405	13152		10939	10936	114	6582	Replay	Post	Edit
Qualification 3	UNPLAYED		11342	10937		6582	11406		114	Play	Enter Scores	Enter Scores
Qualification 4	UNPLAYED		10941	11407		10940	4130		114	Play	Enter Scores	Enter Scores
Qualification 5	UNPLAYED		10938	11342		10936	13152		114	Play	Enter Scores	Enter Scores
Qualification 6	UNPLAYED		10944	6582		11407	11405		114	Play	Enter Scores	Enter Scores
Qualification 7	UNPLAYED		10930	10937		10942	10940		114	Play	Enter Scores	Enter Scores

Figure 80 - Press “Load Next Match” or “Play” button to load a match. It will be listed as the “Loaded Match” near the top..

- The scorekeeper tablets should display the match (or matches) that are available for scoring. Both referees (Red Alliance and Blue Alliance score referees) should click on match that they will be scoring.

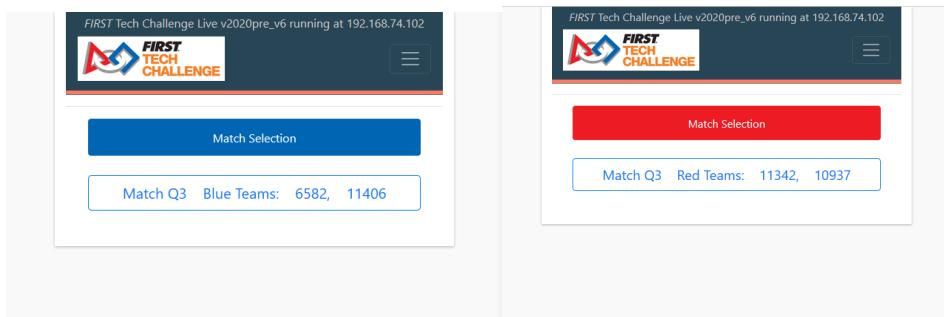


Figure 81 – The red and blue alliance referees should click on the match they will scoring..

- The scorekeeper presses the “Show Preview” button on the Match Control Page. This should force the Audience Displays to display information about the upcoming match.

Note: On the Match Control Page the “Show Preview” button should change from green to yellow after the button has been pressed.

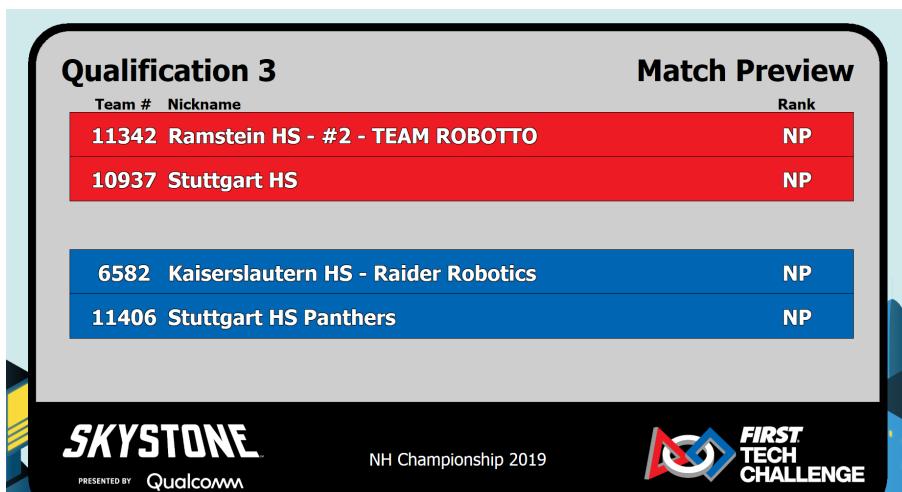


Figure 82 - The Audience Display should display match info after the "Show Preview" button has been pressed.

- The score tracking referees should see a screen that displays the Pre-Match Setup state for their alliance. Each referee (red and blue) should use their tablet to update the Pre-Match Setup state to match the state on the field.
 - The system needs to know if each team is present.
 - The referees should press the respective “Alliance Ready” buttons at the bottom of their screen after they have entered in the current state of their Pre-Match field.
 - In Figure 81 (see below) team 11103 is present. Team 8089 is present.

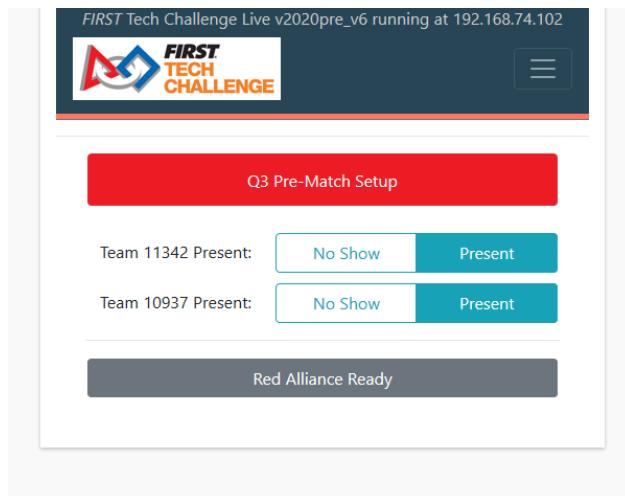


Figure 83 – Each referee should update the Pre-Match state information and then press the “Alliance Ready” button.

- Once the Pre-Match information has been entered, the referee tablets will display a message that indicates that the system is waiting for the match to start.

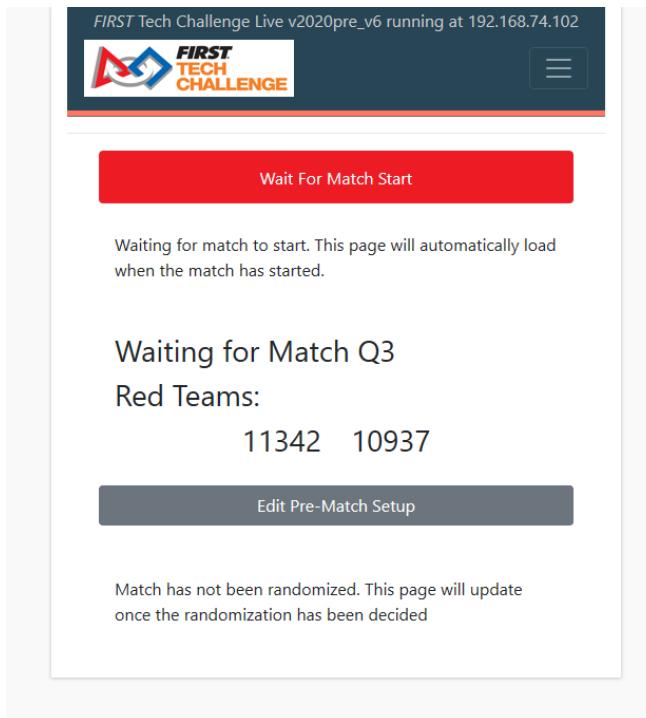


Figure 84 - Referee tablets will indicate that they are waiting for the match to start.

- The scorekeeper should press the “Randomize Field” button to “roll” the virtual die to determine how to configure the minerals for the Autonomous portion of the match.
 - After the field has been randomized, the score tracking tablets will display the randomization results.
 - The Audience Display, however will not show the randomization results yet. Instead, the Match Preview information should still be visible.

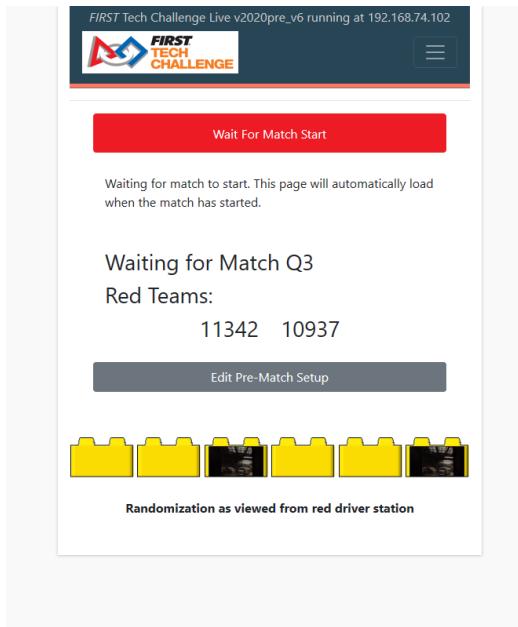


Figure 85 - Score tracking tablets will show randomization, but will still be waiting for match to start.

7. The scorekeeper should press the “Show Random” button to display the randomized information on the Audience Displays.

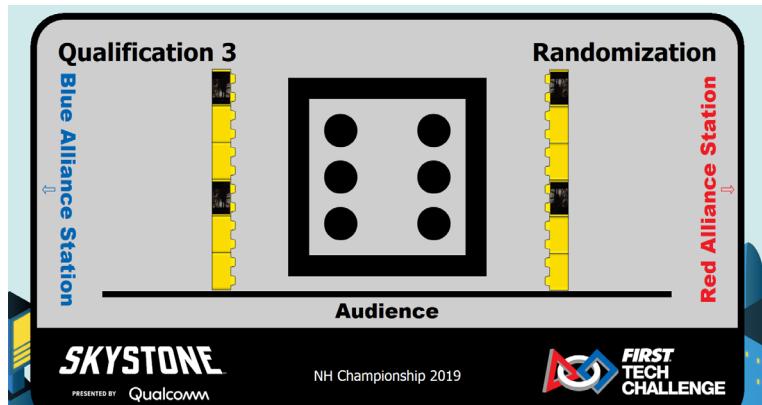


Figure 86 – After the “Show Random” button has been pressed, the Audience Display will show randomization info.

8. The scorekeeper should press the “Show Match” button to show the match information on the Audience Displays and the Field Displays.

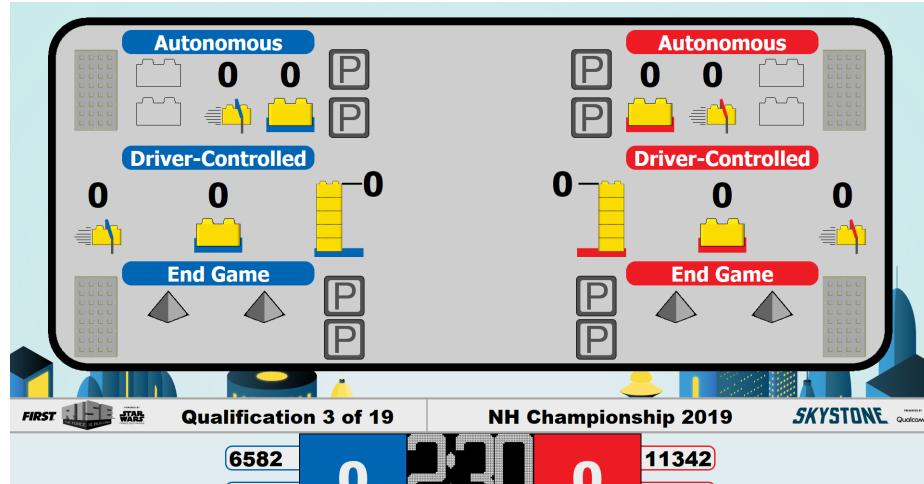


Figure 87 - The Audience and Field Displays should display the match information (Audience Display shown).

- When everyone is ready to begin, the scorekeeper pushes the “Start Match” button to start the match.



Figure 88 - Scorekeeper presses “Start Match” button to start the match.

- During the Autonomous phase, the referees should enter the score tracking data using their respective tablets.
 - While the scores are being entered, the score values on the Audience and Field displays should be updated with the current score tracking values.
 - The scorekeeper can press the “Active Match” tab on the Match Control Page to monitor the score tracking data.
 - The match information (including the time remaining on the countdown timer and the state of the match) are listed for the “Active Match” at the top of the Match Control Page.

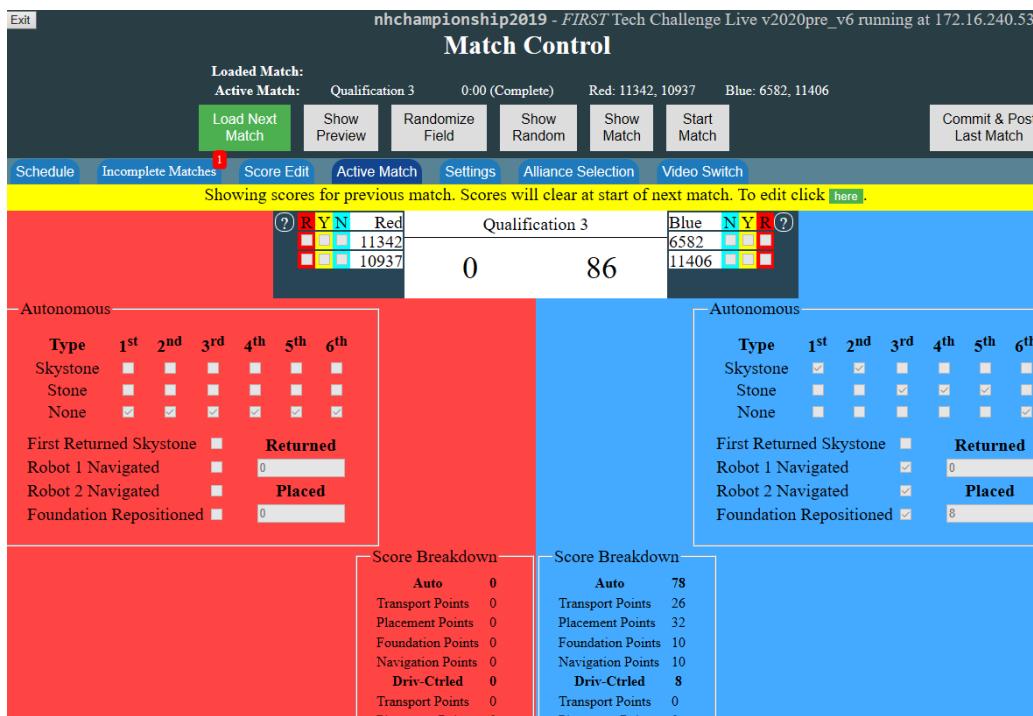


Figure 89 - The scorekeeper can press the "Active Match" tab to display the active match information.

11. Once the Autonomous phase is complete, the referees should verify their autonomous scores and push the “Submit Autonomous” button to submit the autonomous scores to the system.

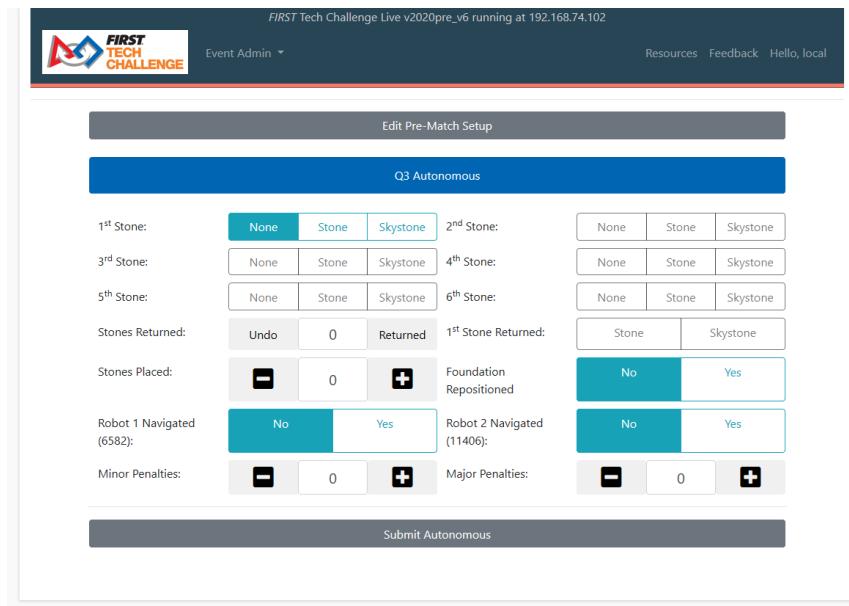


Figure 90 – Referees should push the “Submit Autonomous” button to submit their autonomous scores.

12. During the Driver-Controlled period, referees should enter the scoring data using their tablets.
 13. Once the Driver-Controlled period is complete, referees should verify their scoring data and then push the “Submit Driver-Controlled” button to submit the scoring data.

FIRST Tech Challenge Live v2020pre_v6 running at 192.168.74.102

Event Admin ▾ Resources Feedback Hello, local

Q3 Driver-Controlled

Stones Delivered:	Undo	0	Delivered
Stones Returned:	Undo	0	Returned
Stones Placed:	-	8	+
Tallest Tower:	-	0	+
Capstone 1 Placed (6582)	No	Yes	
Capstone Height:	-	0	+
Capstone 2 Placed (11406)	No	Yes	
Capstone Height:	-	0	+
Foundation Moved	No	Yes	
Robot 1 Parked (6582):	No	Yes	
Robot 2 Parked (11406):	No	Yes	
Minor Penalties:	-	0	+
Major Penalties:	-	0	+

Submit Driver-Controlled

Figure 91 - Referees should push "Submit Driver-Controlled" to submit their Driver-Controlled scores.

14. After the referees submit the Driver-Controlled data, they have an opportunity to review and edit all the scoring data for the match that was just played.
- The referees can adjust their scores if needed.
 - The referees should each press the "Submit Final Scores" when they are ready to submit their final scores for a match.

Stones Delivered: Undo 3 Delivered

Stones Returned: Undo 0 Returned

Stones Placed: - 8 +

Tallest Tower: - 6 +

Capstone 1 Placed (6582): No Yes

Capstone Height: - 6 +

Capstone 2 Placed (11406): No Yes

Capstone Height: - 0 +

Foundation Moved: No Yes

Robot 1 Parked (6582): No Yes

Robot 2 Parked (11406): No Yes

Minor Penalties: - 0 +

Major Penalties: - 0 +

Submit Final Scores

Figure 92 - Referees can review the scores and then push the "Submit Final Scores" button.

15. After the referees have submitted their final scores, under Schedule, the scorekeeper has the option to edit the scores even further. To commit the scores push the "Commit & Post Last Match" or the "Commit" button listed next to the match.

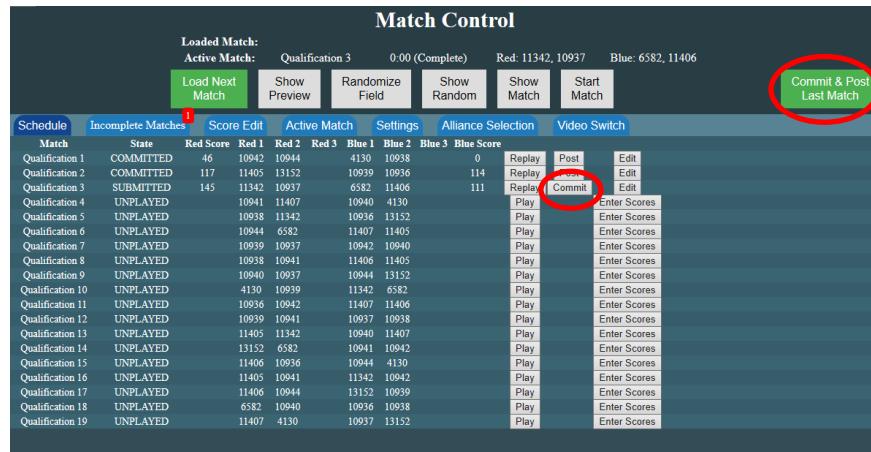


Figure 93 - Scorekeeper can press the "Commit" button to commit the finalized scores.

16. Once the scores have been committed, the Scorekeeper can push the “Post” button to post the results to the Audience Displays.
- The scorekeeper also has the option to Replay the match if the referees determine that a replay is warranted.
 - The scorekeeper also has the option to Edit the scores for the match.

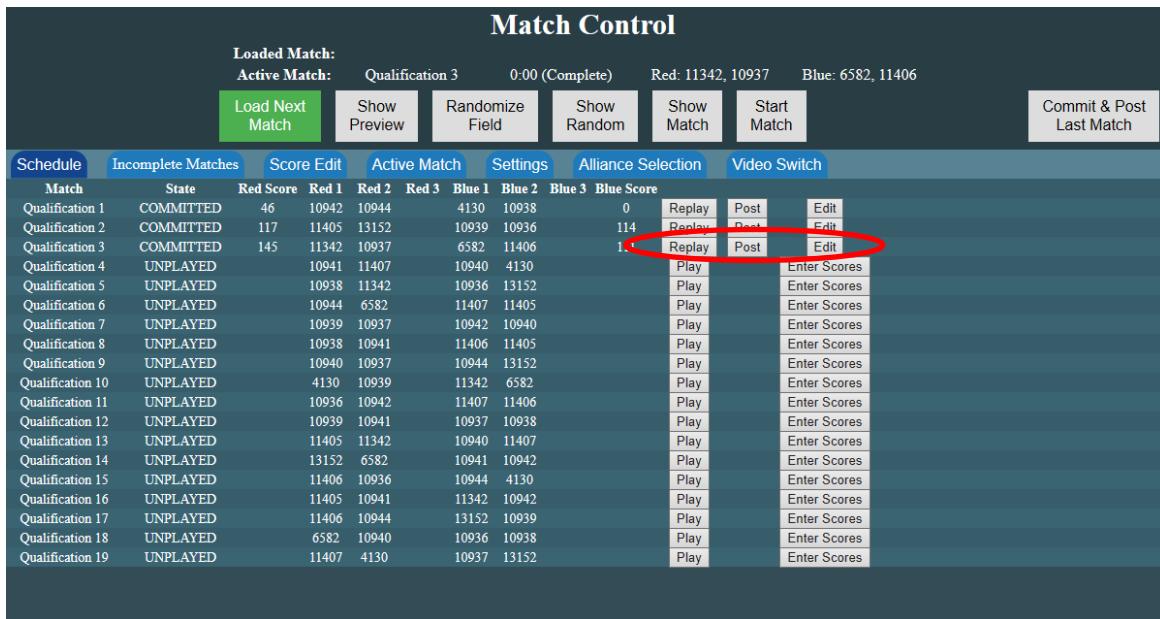


Figure 94 - Once the scores have been committed, the scorekeeper can post the results.

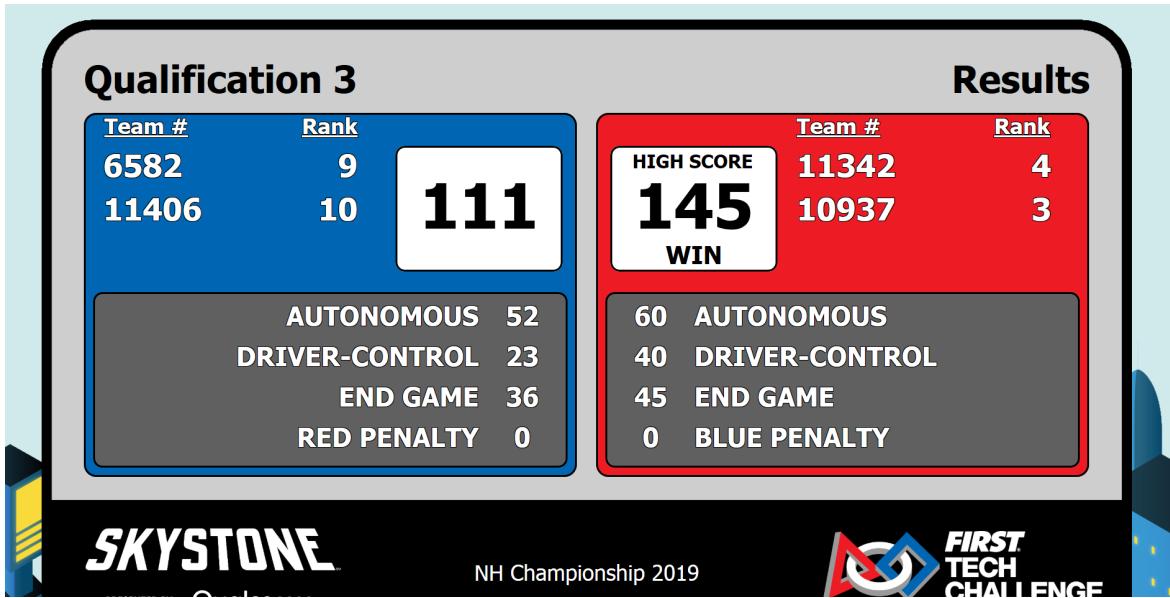


Figure 95 - When the scorekeeper posts the results, the final match info is displayed on the Audience Displays.

Note: If the match is complete and the referees have *not yet submitted* their final scores, the scorekeeper has the option to force an edit of the match score data.

- c. If this is done before the referees submit their final scores, the referees will not be able to submit finals scores for the match (the scorekeeper is overriding their scores).
- d. This option allows a scorekeeper to enter score data from a paper scoresheet, if, for example, live scoring is not available during a match.
- e. In general, however, scores should be submitted by the referees using their score tracking tablets.

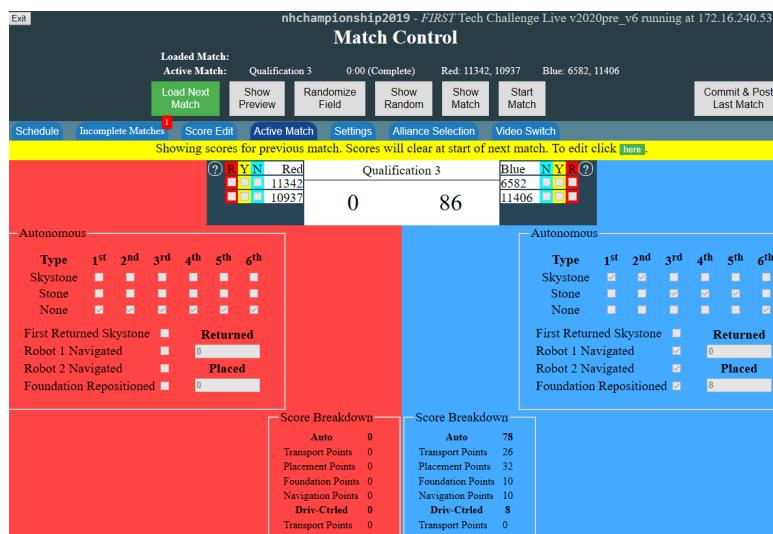


Figure 96 – Scorekeepers can edit/override the score data by clicking on the green “here” button (see image above).

Note: The scorekeeper can abort the match by pushing the “Abort Match” button during the match.

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- f. The system will prompt the scorekeeper to verify that he/she really wants to abort the match.
 - g. If a match is aborted, referees will need to manually refresh their tablet browsers to display the current state information for the match.
 - h. After a match has been aborted, it can be replayed. Note the field might need to be re-randomized before replaying a match.
17. Once this process has been completed, the scorekeeper can press the “Load Next Match” button to start the process again for the next match in the schedule.

14. Managing Elimination Matches

- Once the qualifying matches have been completed and committed, the scorekeeper can press the “Alliance Selection” tab on the Match Control Page to begin the Alliance Selection process.

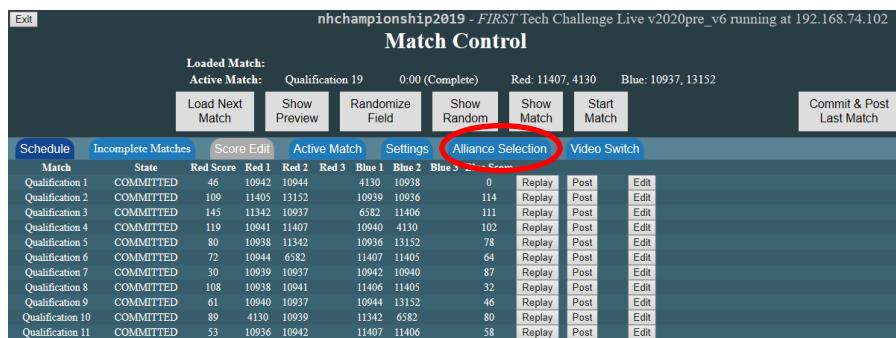


Figure 97 - Press the Alliance Selection tab to begin the selection process.

- Press the “Start Alliance Selection” button will display a ranked list of teams on the Match Control screen.

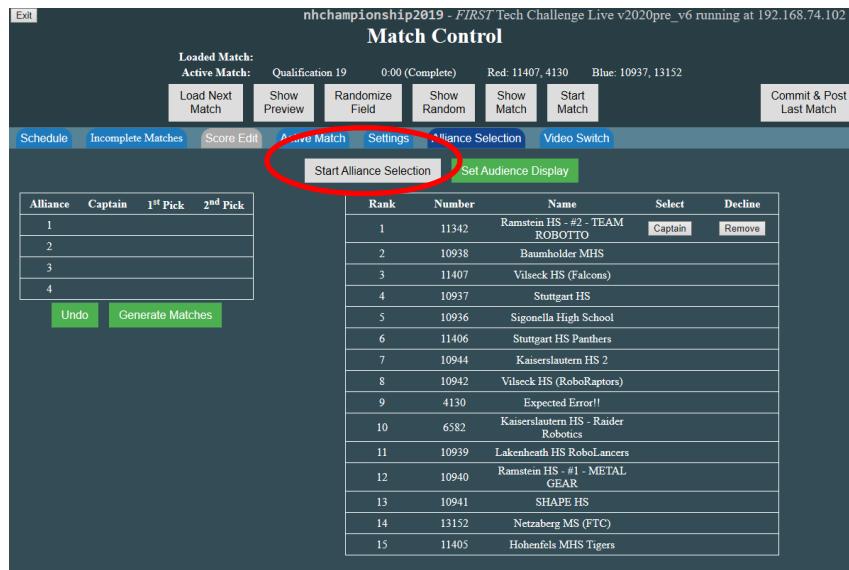


Figure 98 – Pressing the Start Alliance Selection button will display a ranked list of teams.

- The scorekeeper should push the “Set Audience Display” to toggle the Audience Displays to Alliance Selection mode.

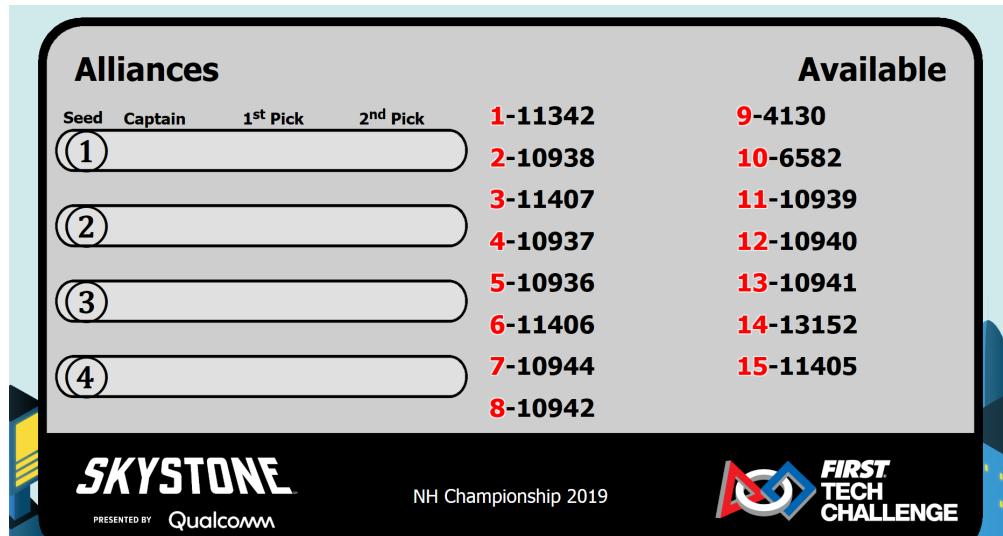


Figure 99 – Pressing the “Set Audience Display” button puts the Audience Displays into Alliance Selection Mode.

- Press the “Captain” button next to a team to designate the team as an Alliance captain. If an eligible team is unable to be an alliance captain (for example, if the team must leave the event early) press the “Remove” button in their listing to remove them from the selection process. Once an alliance Captain is selected, their team number should appear as the Alliance Captain, and the list of available teams will be updated.

Rank	Number	Name	Select	Decline
1	11342	Ramstein HS - #2 - TEAM ROBOTTO	Captain	Remove
2	10938	Baumholder MHS		
3	11407	Vilseck HS (Falcons)		
4	10937	Stuttgart HS		
5	10936	Sigonella High School		
6	11406	Stuttgart HS Panthers		

Figure 100 - Press "Captain" to designate a team as an alliance captain or press "Remove" if they are unable to be a captain.

- As the Captain makes his/her Alliance’s first invitation, the scorekeeper can press the “Accept” or “Decline” button for the invited team to indicate whether the team accepted or declined the Captain’s invitation. The Alliance Selection Displays should update automatically as the button is pressed.

Rank	Number	Name	Select	Decline
2	10938	Baumholder MHS	Accept	Decline
3	11407	Vilseck HS (Falcons)	Accept	Decline
4	10937	Stuttgart HS	Accept	Decline
5	10936	Sigonella High School	Accept	Decline
6	11406	Stuttgart HS Panthers	Accept	Decline
7	10944	Kaiserslautern HS 2	Accept	Decline

Figure 101 – The scorekeeper should press the “Accept” or “Decline” button listed next to a team to accept or decline an invitation.

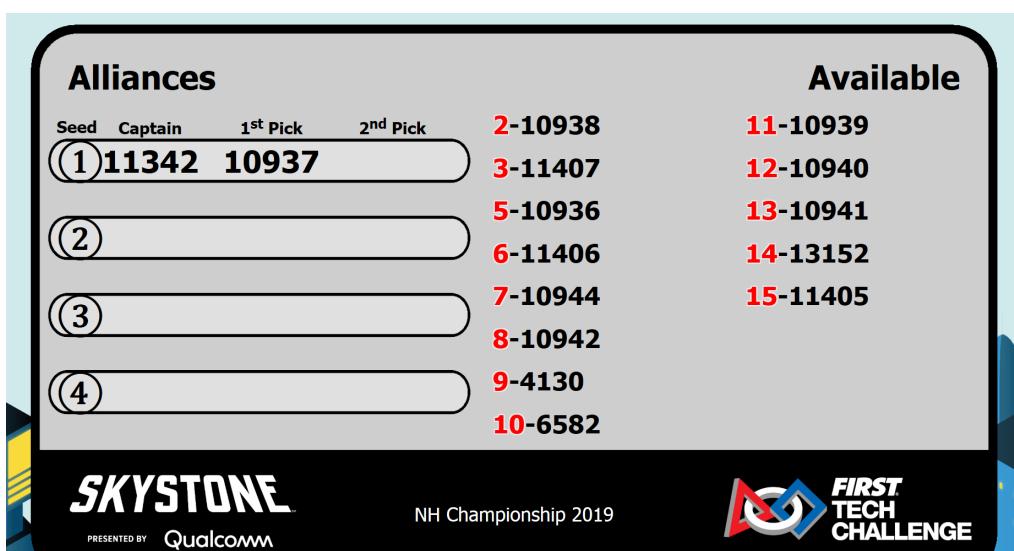


Figure 102 - As teams accept or decline alliance selection requests, the Alliance Selection Display gets updated accordingly.

- Once the first alliance captain has made their initial selection, the process begins again for the team that is eligible to captain the second alliance.

Note: that the software will adhere to the Alliance Selection rules that are prescribed in the official Game Manual when determining and displaying selection eligibility for the remaining teams.

The selection process is repeated until all alliances are finalized. If the scorekeeper needs to undo the most recent alliance selection, then he/she can push the “Undo” button on the Match Control screen.



Figure 103 - Once the alliances are established, push the “Generate Matches” button to generate the elimination match schedule.

- When the alliances are finalized, the scorekeeper should press the “Generate Matches” button to generate the elimination match list. Once the elimination matches have been generated, the scorekeeper can click on the “Schedule” tab to view the elimination schedule.

Match Control										
nhchampionship2019 - FIRST Tech Challenge Live v2020pre_v6 running at 192.168.74.102										
Loaded Match:		Active Match:								
Active Match:		Match								
Load Next Match	Show Preview	Randomize Field	Show Random	Show Match	Start Match	Commit & Post Last Match				
Schedule	Incomplete Matches	Score Edit	Active Match	Settings	Alliance Selection	Video Switch	Play	Enter Scores	Play	Enter Scores
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	
Semifinal 1 Match 1	UNPLAYED	11342	10937	10936	10944					
Semifinal 2 Match 1	UNPLAYED	10938	11406	11407	10942					
Semifinal 1 Match 2	UNPLAYED	11342	10937	10936	10944					
Semifinal 2 Match 2	UNPLAYED	10938	11406	11407	10942					

Figure 104 - Press the “Schedule” tab after the matches have been generated to view the elimination schedule.

- Once the elimination schedule is available, the scorekeeper and referees can run the matches in a manner similar to how the qualification matches are run. However, if there are more than 20 teams participating at your event, the elimination matches will list three teams per alliance. For an event with 3 teams per alliance, during the Pre-Match Setup of an Elimination match, the referees will need to designate which two of the teams are competing in each match.

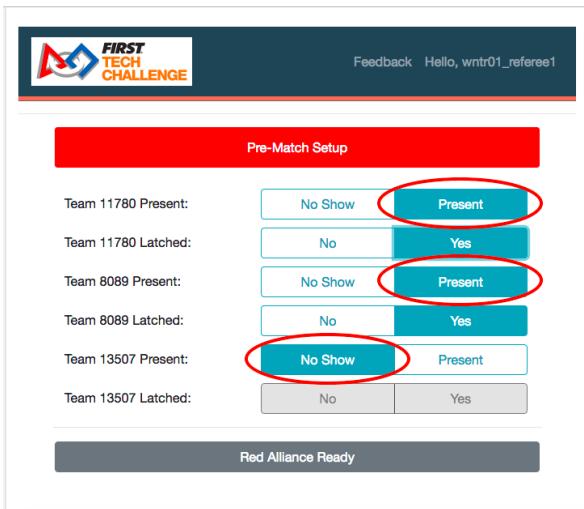


Figure 105 - Referees will need to designate which two teams are participating (i.e., are present) for an Elimination Match.

9. In figure above the referee has indicated that Teams 11780 and 8089 will be playing in the match while team 13507 is sitting out the match for the Red Alliance.

After the first elimination match of a semifinal round has been played, when the referees view the Pre-Match Setup screen for the next match in that semifinal round, a message should appear at the top of the screen indicating which of the three teams did not play in the previous match. This warning appears so that the referee can verify that all three teams for each alliance participated in the elimination matches per the official Game Manual, part 1 (if an alliance has three teams, then “the team that sits out the first match must play in the second match, with no exceptions”).

The system lets the scorekeeper run the matches until each semifinal round has a winning alliance. The scorekeeper can edit, commit, and then post the results for each elimination match. If the alliances in a semifinal round are tied, the system will generate an additional tie breaker match and automatically add it to the elimination schedule.

Schedule	Incomplete Matches	Score Edit	Active Match	Settings	Alliance Selection	Video Switch						
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score			
Semifinal 1 Match 1	COMMITTED	80	11342	10937		10936	10944		80	Replay	Post	Edit
Semifinal 2 Match 1	COMMITTED	85	10938	11406		11407	10942	51	85	Replay	Post	Edit
Semifinal 1 Match 2	COMMITTED	82	11342	10937		10936	10944	64	82	Replay	Post	Edit
Semifinal 2 Match 2	COMMITTED	49	10938	11406		11407	10942	83	49	Replay	Post	Edit
Semifinal 1 Match 3	UNPLAYED		11342	10937		10936	10944			Play	Enter Scores	
Semifinal 2 Match 3	UNPLAYED		10938	11406		11407	10942			Play	Enter Scores	

Figure 106 - The system will automatically add a match to the schedule if the alliances are tied.

When the semifinal matches are complete, the system will automatically generate final elimination matches for the two winning alliances. The final elimination matches are scored in a manner similar to the semifinal

matches. The scorekeeper can edit, commit and post each final-round match. If the alliances tie, the system will automatically add a new match to the schedule.

Schedule	Incomplete Matches 0	Score Edit			Active Match			Settings		Alliance Selection		Video Switch			
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Replay	Post	Edit	Replay	Post	Edit
Semifinal 1 Match 1	COMMITTED	135	11780	8089	13507	11282	11482	11103	160	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 1	COMMITTED	210	12815	11115	12669	7804	12536	10660	160	Replay	Post	Edit	Replay	Post	Edit
Semifinal 1 Match 2	COMMITTED	150	11780	8089	13507	11282	11482	11103	200	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 2	COMMITTED	110	12815	11115	12669	7804	12536	10660	210	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 3	COMMITTED	260	12815	11115	12669	7804	12536	10660	150	Replay	Post	Edit	Replay	Post	Edit
Finals Match 1	UNPLAYED		11282	11482	11103	12815	11115	12669		Play			Enter Scores		
Finals Match 2	UNPLAYED		11282	11482	11103	12815	11115	12669		Play			Enter Scores		

Schedule	Incomplete Matches	Score Edit			Active Match			Settings		Alliance Selection		Video Switch			
Match	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Replay	Post	Edit	Replay	Post	Edit
Semifinal 1 Match 1	COMMITTED	80	11342	10937		10936	10944		80	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 1	COMMITTED	85	10938	11406		11407	10942		51	Replay	Post	Edit	Replay	Post	Edit
Semifinal 1 Match 2	COMMITTED	82	11342	10937		10936	10944		64	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 2	COMMITTED	49	10938	11406		11407	10942		83	Replay	Post	Edit	Replay	Post	Edit
Semifinal 1 Match 3	COMMITTED	121	11342	10937		10936	10944		54	Replay	Post	Edit	Replay	Post	Edit
Semifinal 2 Match 3	COMMITTED	115	10938	11406		11407	10942		41	Replay	Post	Edit	Replay	Post	Edit
Finals Match 1	UNPLAYED		11342	10937		10938	11406			Play			Enter Scores		
Finals Match 2	UNPLAYED		11342	10937		10938	11406			Play			Enter Scores		

Figure 107 - The system will automatically generate the final matches after the semifinal matches are complete.

Once the final matches are complete, the scorekeeper can post the final match results to the Audience Displays and display the winning alliance.

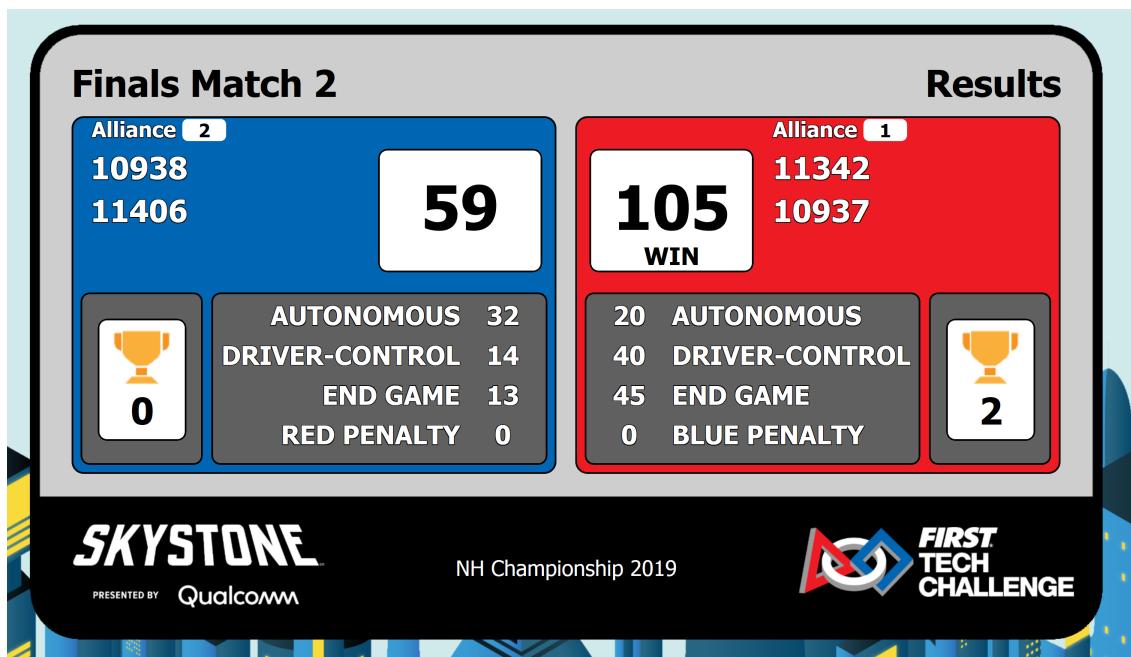


Figure 108 - Once final matches are complete, the scorekeeper can post the final match results and display the winning alliance.

15. Managing League Events

A League Meet is a one-field competition that uses the same field and game elements as other *FIRST* Tech Challenge tournaments. However, for a League Meet, the event is abbreviated, and only includes Qualification Matches (but no judging sessions or elimination matches). Teams that are part of a league can compete in as few or as many League Meets as they choose. A team's league ranking is calculated using data from prior league meets. At the end of the season, a league will have a League Championship, which will include judging and elimination matches.

The scorekeeping system supports league play throughout a season.

15.1. Creating Leagues for Your Region

Currently, the scorekeeper software requires that you define and manage your leagues as part of an event. If you want to create and manage leagues in advance of any scheduled league meets, you can create a dummy event at the beginning of the season and define your leagues from within the dummy event.

Note: that you can also define the leagues from an actual scheduled League meet if you prefer (instead of using a dummy event). This section, however, uses a "dummy" event to create the leagues.

1. Log in to the scoring software as the Local admin user.
2. Enter the region key or Skip this step.
3. Use the "Create Event" menu item to create a dummy event.

- a. Specify a unique Event Code for your League Meet (all lowercase, no spaces).
 - i. The event code that you specify for this "dummy" event will appear in the exported data file.
 - ii. A good example might be the region name, such as "granite".
- b. Make sure that "League Meet" is selected as the Event Type for the dummy event.
- c. Specify an Event Name (such as "Granite State Dummy Event")
- d. Specify a date (you can use the current day).
- e. Click "Create Event" to create your "dummy" event.

Event Code:	<input type="text" value="granite"/>
Event Name:	<input type="text" value="Granite State Dummy Event"/>
Event Type:	<input type="text" value="League Meet"/>
Event Start Date:	<input type="text" value="10/10/2018"/>
Event End Date:	<input type="text" value="10/10/2018"/>
Number of Fields:	<input type="text" value="1"/>
Create Event	

Figure 109 - Create a Dummy event to create your leagues.

4. On the Event Dashboard for your newly created dummy event, select step 3 "Manage Leagues".
5. Use the "Add" button on the right side of the Manage Leagues Page to open the Create League form.
6. Specify a unique League Code, following the same rules as event codes (all lowercase letters & numbers and underscores, no whitespace).
7. Specify a League Name and set the region information.
8. Click "Create League" to create the new League.

League Code:
queen_city

League Name:
Queen City League

Country:
USA

State:
NH

City:
Manchester

Create League

Figure 110 – Specify League Code, Name and region and press “Create League”.

9. For your newly created League, click on the "Add/Remove Teams" button to open the Add Teams page.
 - a. Use the “Add Individually” tab to add teams by typing in the team number and hitting the “Add” button. Note that if there is team data associated with the team number, this information will appear in the team listing. If the team number is new the other fields will be empty in its listing.

<< Back

Adding to league 'queen_city'

Find by State/Province		Add Individually						Done	
Team Number to Add: <input type="text" value="12345"/>		<input type="button" value="Add"/> <input checked="" type="checkbox"/> Hide Schools / Full Name		<input type="button" value="Choose File"/> No file chosen		<input type="button" value="Upload Team List"/>			
Number	Name	City	State/ Province	Country	Rookie Year	Remove			
11282	Founders Academy E	Manches	NH	USA	2016	<input type="checkbox"/>			
11482	MaverBITS	Bedford	NH	USA	2016	<input type="checkbox"/>			
12494	Southside Gear Grinc	Manches	NH	USA	2016	<input type="checkbox"/>			
12536	MPAL	Manches	NH	USA	-1	<input type="checkbox"/>			
12622	Red Spark	Bedford	NH	USA	2017	<input type="checkbox"/>			
12758	Derryfield Hungry Ro	Manches	NH	USA	2017	<input type="checkbox"/>			
14024	C.H.A.O.S.	Manches	NH	USA	2017	<input type="checkbox"/>			
86753					-1	<input type="checkbox"/>			

Figure 111 - Type in team number and hit "Add" to add a team.

- b. You can also click on the “Find by State/Province” tab to add teams by region.
10. When finished, click "Done".
 - a. This returns you to the League form.
 - b. Click "Back to League List" in the top left corner to return to the Manage Leagues page.
11. Repeat steps 4-9 for each additional League for your region.
12. When complete, click the "Export Leagues" button at the top of the page.
 - a. The file will be downloaded to the user's Downloads folder, and the file's name will end with the suffix “_leagues.db”.
 - b. This League database file can now be sent to your first League meet.

The screenshot shows the 'Event Admin' dashboard with the 'FIRST TECH CHALLENGE' logo at the top. In the center, there's a section titled 'Leagues:' with a table listing three leagues: Gate City League, Seacoast League, and Queen City League. At the top of this section is a button labeled 'Export Leagues' which is circled in red. To the right of the table are buttons for 'Choose File' (with 'No file chosen'), 'Import League Data', and 'Feedback' (with 'Hello, local'). Below the leagues table is another section titled 'Meets:' with a table header for 'Code', 'Name', 'Start', and 'End'. A note below the meets table states: 'Note: The current event does not appear in the list of league meets. It will still be included in rankings calculations and will be added to the exported file at the conclusion of the event.'

Figure 112 - Press the "Expore Leagues" button to export the League data from this event to a downloaded file.

Important Note: To avoid duplicate Event Codes for League Meets, it is recommended that League managers establish a naming format before their first League event and tell their scorekeepers what Event Codes to use for their respective events. One possible format would be the following,

[region]_meet[#]_[year]

For example, in the Granite State region, meet #1 for the year of 2018 might be “granite_meet1_18”.

Also note that the “Export Leagues” button will export the team data for the Leagues from the current event. It will also export match/meet data from previous league events that it may have (from a file import). The “Export Leagues” button, however, will not export the match data from the Event that is currently being scored. If you want to include the match data from the event that is currently being scored, you must use the “Download Archive File” button in the Event Dashboard (which is explained in the section below).

15.2. Running a League Event

League events are similar to a non-League event, but the scorekeeper might need to import League data from a previous League event before scoring the new event. League data files may contain League team information and meet data. Also, after a League event is complete, the scorekeeper will need to export the event data to a file to be used for calculating team ranks at subsequent League events.

1. Create the event as normal, ensuring that "League Meet" or "League Tournament" is selected as the Event Type.
 - a. Make sure that you specify a unique Event ID when creating the event.
 - b. Use the Event ID format that was agreed upon or recommended for your region.
2. From the Event Dashboard, select "Manage Leagues".
3. Use the "Choose File" button at the top to select the data file provided by your Event Manager/League Manager. After selecting the file, click "Import League Data" to import the data.
4. The League Data Import page shows a list of leagues and events that will be imported from the selected file.
 - a. Green is a new league/meet that will be imported.
 - b. Red is a duplicate league/meet that will not be imported.
 - c. If a league or meet is yellow, a data mismatch has occurred, and it will present several options.

- d. Note that each import item can be expanded to show a brief explanation by clicking on the “+” symbol.

The screenshot shows the 'League Data Import' interface. It lists three imported leagues:

- gate_city**: Gate City League, 7 Teams. A tooltip indicates: "This league will be imported into the event. It contains 7 teams:" followed by a list of team numbers: 10660, 12789, 11866, 13738, 10251, 11115, 9181.
- seacoast**: Seacoast League, 10 Teams.
- queen_city**: Queen City League, 9 Teams.

At the bottom are 'Import' and 'Cancel' buttons.

Figure 113 - Green items are new, red items are duplicate and yellow items have data conflicts.

- If everything looks ok (nothing highlighted in yellow), click "Import".
- After importing all files (you can import more than one), return to the Event Dashboard via the link at the top-left corner of the screen.
- Click "Add/Edit Teams" to add/edit teams for your event.
 - This page defaults to "Find by League".
 - Select a league from the dropdown, and it will present a list of teams in the league to add to the event.
 - Add teams to the event's team list by selecting the checkbox.

The screenshot shows the 'Adding to event' interface for 'granite_event3_18'. The 'Find by League' tab is selected, showing a dropdown menu set to 'gate_city'. The table below lists the teams:

Number	Name	School	City	State/ Province	Country	Rookie Year	Add?
9181	MasterMinds	Family Friends	Nashua	NH	USA	2014	<input checked="" type="checkbox"/>
10251	36 Cents	Windup Robotics 4H Club & 4-H Youth Development Organization	Windham	NH	USA	2015	<input checked="" type="checkbox"/>
10660	HBMS Knights	Hollis-Brookline Middle School	Hollis	NH	USA	2015	<input checked="" type="checkbox"/>
11115	Gluten Free	Family/Community	Hollis	NH	USA	2016	<input checked="" type="checkbox"/>
11866	HBMS Knights	Hollis-Brookline Middle School	Hollis	NH	USA	2016	<input type="checkbox"/>
12789	Hack-Gearz	Merrimack Middle School	Merrimack	NH	USA	2017	<input type="checkbox"/>
13738	Alvirne Robotics	Alvirne High School	Hudson	NH	USA	2017	<input type="checkbox"/>

A 'Done' button is visible in the top right corner.

Figure 114 – You can select a League and then add teams from the selected League using the “Find by League” tab.

- Alternatively, you can add teams individually by typing in the team number and pressing “Add” on the “Add Individually” tab.
- You can also add teams by region using the “Find by State/Province” tab.
- After adding teams, select "Done", and proceed with the event as normal.
- After the event is complete, archive the data to a file by selecting the last item on the Event Dashboard, "Download Archive File".
 - The archived event data (which includes league lists and scoring data) should be downloaded to the Downloads folder of the scorekeeper computer.
 - Send the downloaded file to your League Manager/Affiliate Partner (so the data can be used for future League events in the season).
 - Note that this archive data file includes the current Event's match data and can be imported into the next League Meet to incorporate this data into the League rankings.

Important Note: Scorekeepers at meets should not edit the league team list unless instructed to do so. If they believe the list is wrong, they should leave it and notify the League Manager after the event. An incorrect league team list will not affect match data, as long as the event's team list is correct.

15.3. Managing Parallel League Meets

If two events are played in parallel involving the same league, the data will need to be combined after both events have occurred.

FIRST recommends that in advance of a set of parallel league meets, someone who is designated as a “League Manager” create a League data file (using the dummy event method described in the section entitled *Creating Leagues for Your Region*, see page 70) that will be shared with both parallel events.

The scorekeepers at each event should use import this League data file at their respective events and score their matches normally. After both events are complete, the event data from each event should be forwarded to the League Manager, who will import these two events files and generate a new, combined event file that can be used for future League events.

Use the following steps to import the dual event data and combine them into a single event data archive file.

1. Create a dummy event, in the same manner as before.
2. On the Manage Leagues page, import the data files from each event, 1 at a time. The second set of imported items will show red/duplicate league lists, and possibly some duplicate meets. This is OK.
3. If a league is yellow, it means they were edited by the scorekeeper at one of the events. The system gives several options, the one you most likely want to choose is the *merge* option. After the import is complete, edit the league to view the team list, and make any adjustments as needed.
4. If an event is yellow, it likely means two events were created with the same Event Code. The system will let you change the Event Code for the one that is being imported.
5. After all data is imported, use the "Export Leagues" button to download a file containing the merged data. This file can be imported by the scorekeeper at the next League event.

16. Managing Awards

If you are running an event that is not a League Meet, then your Event Dashboard should include a step that allows you to manage awards for your event. Press the “Manage Awards” button to begin the awards management process.



Manage Awards

Figure 115 - Press the “Manage Awards” process to start the awards management process.

When you first launch the Awards Manager, the system will default to the “Give Awards” screen (see figure below).

nhchampionship2019 - Championship

Awards Manager

Save & Exit Manage Awards Give Awards View / Print Script Present Awards

█ Already given █ Must be given █ Optional

Give Awards

Award	Award Description
Judges' Award Winner: NOT GIVEN	Judges' Award The Judges Award is given at the discretion of the Judges to a Team they have encountered whose unique efforts, performance or dynamics merit recognition, yet the Team does not fit into any of the existing Award categories.
Compass Award Winner: NOT GIVEN	
Promote Award Winner: NOT GIVEN	Status Optional
Arm, Inc. Control Award Winner: NOT GIVEN	Winner Second Place <input type="button" value="none"/>
Motivate Award Winner: NOT GIVEN	Third Place <input type="button" value="none"/>
Design Award Winner: NOT GIVEN	<input type="button" value="Add Row"/> <input type="button" value="Remove Row"/>
Collins Aerospace Innovate Award Winner: NOT GIVEN	Judge's Comments <input type="text"/>
Connect Award Winner: NOT GIVEN	

Figure 116 – “Give Awards” screen of Awards Manager.

The “Give Awards” screen lists all of the awards that are defined for the current event in the order that they are to be given. Awards that are highlighted in red must be given per FIRST rules. Awards that are highlighted in green have already been “given” (i.e., that already have winners assigned).

16.1. Giving an Award

When you are ready to give an award to a team, select the award by clicking on it on the “Give Awards” screen. After you have selected the desired award, enter the required information for each team or individual. You can also enter text to describe why the winner was selected in the “Winner Justification section”.

Awards Manager

Save & Exit | Manage Awards | Give Awards | View / Print Script | Present Awards

Give Awards

Award			
Judges' Award Winner: NOT GIVEN			
Compass Award Winner: NOT GIVEN			
Promote Award Winner: NOT GIVEN			
Arm, Inc. Control Award Winner: NOT GIVEN			
Motivate Award Winner: NOT GIVEN			
Design Award Winner: NOT GIVEN			
Collins Aerospace Innovate Award Winner: NOT GIVEN			
Connect Award Winner: NOT GIVEN			
Think Award			

█ Already given █ Must be given █ Optional

Award Description

Judges' Award

The Judges Award is given at the discretion of the Judges to a Team they have encountered whose unique efforts, performance or dynamics merit recognition, yet the Team does not fit into any of the existing Award categories.

Status Optional

Winner	Second Place
(none)	(none)

Third Place

(none)

Add Row | Remove Row

Judge's Comments

This team had exceptional teamwork and gracious professionalism during competition.

Figure 117 - Click on the "Edit" button to edit the selected award.

Press “Save” to save your changes.

Save & Exit | Manage Awards | Give Awards | View / Print Script | Present Awards

Give Awards

Award			
Judges' Award Winner: 6582 Kaiserslautern HS - Raider Robotics			
Compass Award Winner: NOT GIVEN			
Promote Award Winner: NOT GIVEN			
Arm, Inc. Control Award Winner: NOT GIVEN			
Motivate Award Winner: NOT GIVEN			
Design Award Winner: NOT GIVEN			
Collins Aerospace Innovate Award Winner: NOT GIVEN			
Connect Award Winner: NOT GIVEN			

█ Already given █ Must be given █ Optional

Award Description

Judges' Award

The Judges Award is given at the discretion of the Judges to a Team they have encountered whose unique efforts, performance or dynamics merit recognition, yet the Team does not fit into any of the existing Award categories.

Status Optional

Winner	Second Place
6582 - Kaiserslautern HS - Raider	4130 - Expected Error!!

Third Place

10937 - Stuttgart HS

Add Row | Remove Row

Judge's Comments

This team had exceptional teamwork and gracious professionalism during competition.

Figure 118 - After assigning winners and providing justification text, press "Save" to save the award information.

16.2. Managing the List of Awards

You can click on the “Manage Awards” button to modify award. You can also modify the order of the awards by clicking on an award listing, and then using the mouse to drag it to its new location in the presentation order.

Note: The mandatory awards are supposed to be presented in the original order as listed by the system. Also note that the system will not let you edit or delete a mandatory award, you can only edit optional awards.

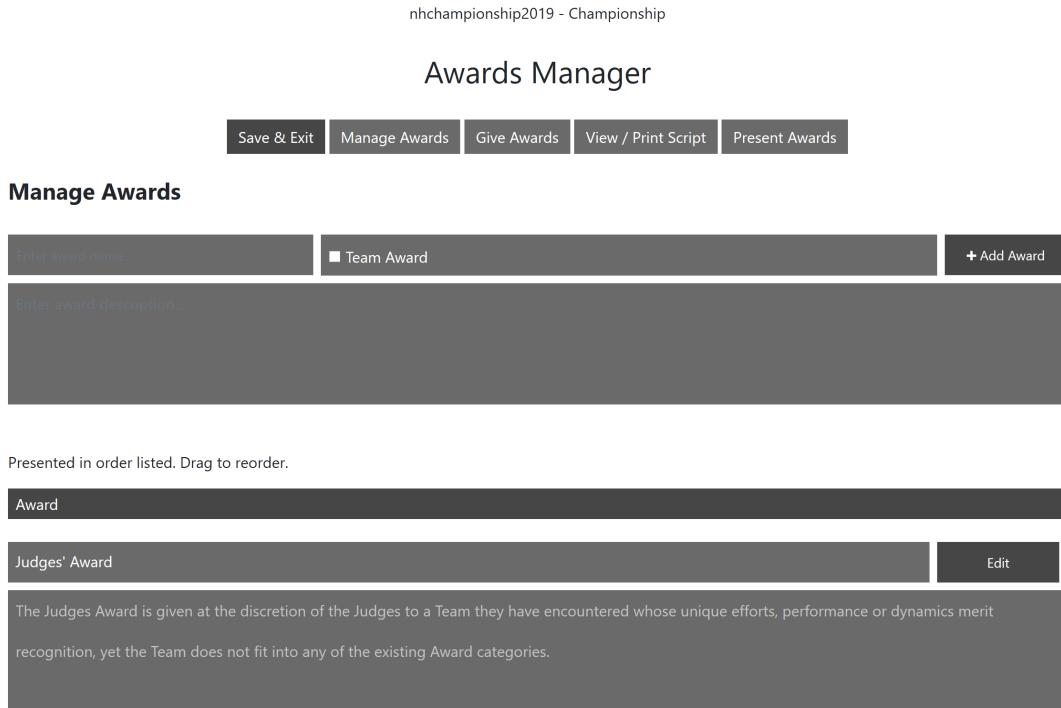


Figure 119 - You can edit optional awards. You can also reorder the awards by clicking on and dragging the award name.

Once you have finished managing your awards, you can return to the “Give Awards” screen to continue giving the awards (i.e., assigning winners for the awards).

16.3. Viewing / Printing the Awards Script

Once you have given out all the awards (i.e., once you have assigned winners to each award) the list on the “Give Awards” screen should be green.

Give Awards

Award
Judges' Award Winner: 6582 Kaiserslautern HS - Raider Robotics
Compass Award Winner: 10942 Vilseck HS (RoboRaptors)
Promote Award Winner: 10941 SHAPE HS
Arm, Inc. Control Award Winner: 10938 Baumholder MHS
Motivate Award Winner: 11405 Hohenfels MHS Tigers
Design Award Winner: 11407 Vilseck HS (Falcons)
Collins Aerospace Innovate Award Winner: 13152 Netzaberg MS (FTC)
Connect Award Winner: 11406 Stuttgart HS Panthers
Think Award Winner: 10940 Ramstein HS - #1 - METAL GEAR
Dean's List Semi-Finalists Winner:

Figure 120 - Once you have assigned winners for each award, the list should turn all green.

Press the “View/Print Script” button to view the award script. Press the “Print” button to print the script.

Awards Manager

[Save & Exit](#) [Manage Awards](#) [Give Awards](#) [View / Print Script](#) [Present Awards](#)

View Script

 [Print](#)

Welcome to the NH Championship 2019 Awards and Closing Ceremony! As many of you know, FIRST is a non-profit and a global movement transforming lives and inspiring future innovators, and problem solvers. FIRST engages young people, kindergarten through 12th grade in our four STEM programs including FIRST LEGO League Jr., FIRST LEGO League, FIRST Robotics Competition, and of course, FIRST Tech Challenge. Our STEM programs are a fantastic opportunity to have the hardest fun you'll ever have! Speaking of the hardest fun you'll ever have, what an outstanding day we've had! Before we hand out our awards, let's thank the awesome people who made this event happen. Today could not have been possible without our volunteers! Please give a big round of applause for all the volunteers who have given their time, effort, dedication, and so much more to make this program a success. Also, a big round of applause for our generous sponsors, especially our Presenting Sponsor, Qualcomm and our Official Program Sponsor Collins Aerospace! Thank you! Before we hand out the awards, I would like to introduce our special guest.
 [Introduce Speaker]

Let's give a round of applause to our Judges, Referees and Field Tech Advisors for all their expertise, dedication and hard work today as they make their way up to the front for the presentation of awards.
 [Volunteers file onto the stage]
 Thank You! And now, the Awards.

Judges' Award

The Judges Award is given at the discretion of the Judges to a Team they have encountered whose unique efforts, performance or dynamics merit recognition, yet the Team does not fit into any of the existing Award categories.

Figure 121 – Press the “View/Print Script” button to view the awards script.

16.4. Presenting the Awards

Press the “Present Awards” button to begin the presentation process.

Judges' Award	
Third Place	10937 - Stuttgart HS
Second Place	4130 - Expected Error!!
Winner	6582 - Kaiserslautern HS - Raider Robotics
Compass Award	
Second Place	He Smith (10939)
Winner	She Smith (10942)
Promote Award	
Winner	10941 - SHAPE HS
Arm, Inc. Control Award	
Winner	10938 - Baumholder MHS

Figure 122 – Press “Present Awards” button to begin presenting the awards.

To reveal an award, simply click on the Award name and the Audience Display should display the Award name (but not the users). Clicking on the 3rd place winner, will reveal the third-place winner on the Audience Display. Clicking on the 2nd Place winner will reveal the second-place winner on the Audience Display. Clicking on the 1st Place winner will reveal the first-place winner on the Audience Display. If you’d like to reveal all of the winners at once, simply click on the 1st Place winner.



Figure 123 - As each winner is revealed, their team number and name are displayed on the Audience Display.

17. Reviewing Match Results

If you navigate to the event home page, you can click on the “Match Results” link under the “Event Info” category to view the Match Results for the currently selected event.

Event Info

- [Judging & Inspection Schedule](#)
- [Judging & Inspection Status](#)
- [Match Schedule](#)
- [Rankings](#)
- [Match Results](#)
- [Pit Display](#)
- [Event Reports](#)

Figure 124 - Click on “Match Results” link to view match results for the currently selected event.

The Match Results page displays the available match results for the currently selected event. You can press the “Print” button to print these results.

		NH Championship 2019 Match Results				
Match	Result	Red	Blue	Score breakdown		History
Q1	46-0 R	10942	4130	Scoresheet		View Match History
		10944	10938	Red	Blue	View Match History
Q2	109-114 B	11405	10939	Scoresheet		View Match History
		13152	10936	Red	Blue	View Match History
Q3	145-111 R	11342	6582	Scoresheet		View Match History
		10937	11406	Red	Blue	View Match History
Q4	119-102 R	10941	10940	Scoresheet		View Match History
		11407	4130	Red	Blue	View Match History
Q5	80-78 R	10938	10936	Scoresheet		View Match History
		11342	13152	Red	Blue	View Match History

Figure 125 - You can view and print the match results.

You can also review the virtual scoresheets for a match by clicking on the corresponding “Scoresheet”, “Red” or “Blue” link for the match under the “Score breakdown” column. “Scoresheet” shows the combined scoresheet (Red and Blue), while the “Red” and “Blue” links show the individual scoresheets.

<< Back to Match Results		Red Alliance			Blue Alliance		
		Match: Q3 Field: 1		Match: Q3 Field: 1			
Autonomous Period							
Type	1 st	2 nd	3 rd	4 th	5 th	6 th	Returned
Sky stone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
Stone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	First Returned Skystone
None	✓	✓	✓	✓	✓	✓	Placed
							Foundation Repositioned
							✓
Robot #1 Navigated ✓		Robot #2 Navigated ✓		Robot #1 Navigated ✓		Robot #2 Navigated ✓	
Driver-Controlled Period		End Game Period		Driver-Controlled Period		End Game Period	
Foundation Moved ✓							
Delivered	12	Tallest Skyscraper	9	Robot #1	Robot #2	Robot #1	Robot #2

Figure 126 - You can review the combined or individual scoresheets for a match.

You can also click on the “View Match History” link to view how many times the scores for a match were modified and re-committed.

History for Q1

Commit #	Time	Winner	Red Score	Blue Score	Scoresheet
1	2018-11-08 08:11:22 AM	Blue	25	35	Scoresheet
2	2018-11-08 08:12:56 AM	Blue	25	65	Scoresheet
3	2018-11-08 08:13:06 AM	Blue	40	65	Scoresheet

Figure 127 - You can view how many times a match's scores were revised and re-committed.

18. Troubleshooting the System

18.1. Accessing the System Logs

It can be helpful to access the system logs and review messages from the FIRST Tech Challenge Live scorekeeping server. The output from the scorekeeping server is redirected to a text file in a subdirectory within the software directory. To access the log files, in the main program directory the FIRST Tech Challenge Live software look for a subdirectory named “bin”. Double click on the “bin” subdirectory to view its contents.

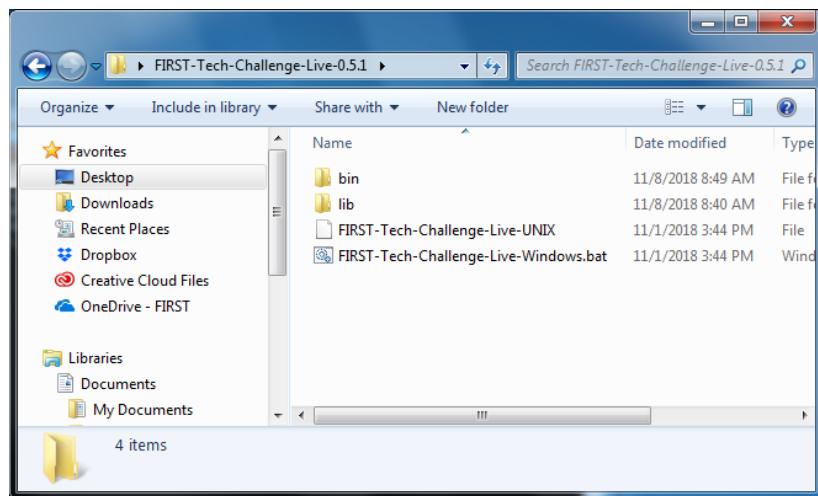


Figure 128 - Open the bin subdirectory.

You should now see a directory called “logs”. Double-click on the logs folder to view its contents.

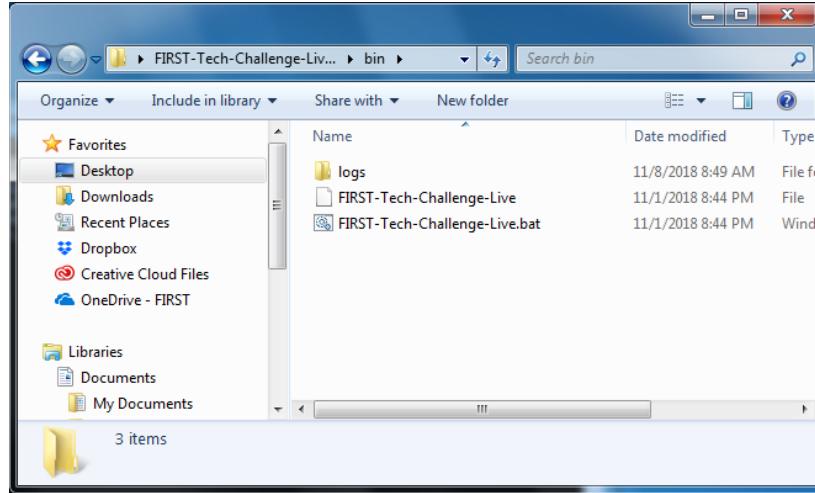


Figure 129 - Double click on the "logs" subdirectory.

If you have run the software at least one time, then you should see at least one log file in the "logs" subdirectory. Double click on a log file to view its contents.

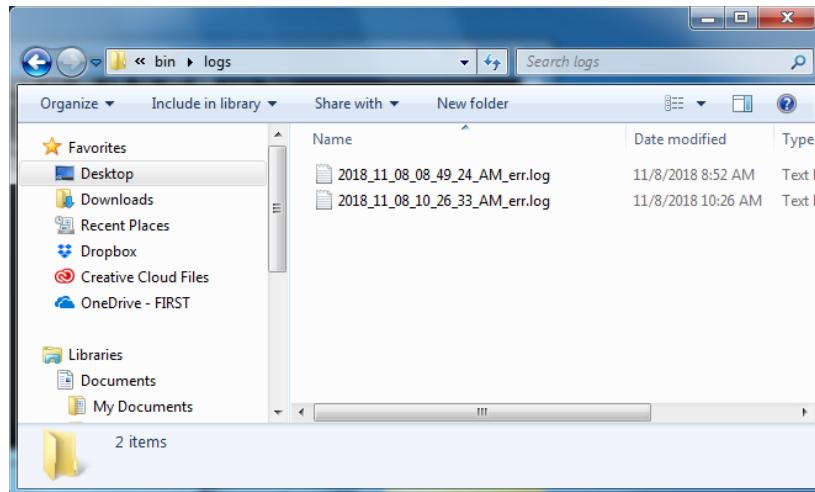


Figure 130 - You should see a listing of log files within the "logs" directory.

2018_11_08_08_49_24_AM_err.log - Notepad

[main] INFO org.usfirst.ftc.server.SQLiteServerDAO - Creating server.db
[main] INFO org.usfirst.ftc.server.Server - External Static Files
[main] INFO spark.staticfiles.staticFilesConfiguration - External StaticResource
[main] WARN spark.staticfiles.staticFilesFolder - Registering external static
[main] INFO org.usfirst.ftc.server.Server - Attempting to start server on port
[Thread-0] INFO org.eclipse.jetty.util.log - Logging initialized @21981ms
[Thread-0] INFO spark.embeddedserver.jetty.EmbeddedJettyServer - == Spark has
[Thread-0] INFO spark.embeddedserver.jetty.EmbeddedJettyServer - >> Listening
[Thread-0] INFO org.eclipse.jetty.server.Server - jetty-9.3.z-SNAPSHOT
[Thread-0] INFO org.eclipse.jetty.server.ServerConnector - Started ServerConne
[Thread-0] INFO org.eclipse.jetty.server.Server - Started @26017ms
[main] INFO org.usfirst.ftc.server.Server - Server started on port 80
[main] INFO org.usfirst.ftc.server.Server - Launching browser for OS: Windows
Nov 08, 2018 8:50:05 AM org.apache.velocity log
SEVERE: Left side (\$disallowedTypes.size()) of '>' operation has null value at
[qtp870733712-13] INFO org.usfirst.ftc.event.SQLiteEventDAO - Creating nhchamp
Nov 08, 2018 8:52:44 AM MatchMakerWrapper saveGeneratedMatches
INFO: processing line=1 7135 0 12494 0 11866 0 11282 0
Nov 08, 2018 8:52:44 AM MatchMakerWrapper saveGeneratedMatches
INFO: processing line=2 7804 0 11482 0 11115 0 11536 0
Nov 08, 2018 8:52:44 AM MatchMakerWrapper saveGeneratedMatches
INFO: processing line=3 8888 0 9181 0 10660 0 8089 0
Nov 08, 2018 8:52:44 AM MatchMakerWrapper saveGeneratedMatches
INFO: processing line=4 12622 0 11103 0 9620 0 10251 0

Figure 131 - Log files contain useful information for troubleshooting.

19. Appendix A – Resources

Game Forum Q&A

<http://ftcforum.usfirst.org/forum.php>

Anyone may view questions and answers within the FIRST® Tech Challenge Game Q&A forum without a password. To submit a new question, you must have a unique Q&A System User Name and Password for your team.

Volunteers that apply for a specific volunteer role will receive an email from FTCTrainingSupport@firstinspires.org with their username and password to the forum. You will receive access to the forum thread specific to your role.

FIRST Tech Challenge Game Manuals

Part 1 and 2 - <https://www.firstinspires.org/resource-library/ftc/game-and-season-info>

FIRST Headquarters Pre-Event Support

Phone: 603-666-3906

Mon – Fri

8:30am – 5:00pm

Email: Firsttechchallenge@firstinspires.org

FIRST Tech Challenge Event On-Call Support

These numbers are available for event personnel only. Please **do not** call these numbers if you are a team looking for a ruling, a decision, or assistance. We trust that you will not misuse this resource.

Day of Event Robot Control System and Scoring System Support: 603-206-2450

All other Day of Event support: 603-206-2412

FIRST Websites

FIRST homepage – www.firstinspires.org

[FIRST Tech Challenge Page](#) – For everything FIRST Tech Challenge.

[FIRST Tech Challenge Volunteer Resources](#) – To access public Volunteer Manuals.

[FIRST Tech Challenge Event Schedule](#) – Find FIRST Tech Challenge events in your area.

FIRST Tech Challenge Social Media

[FIRST Tech Challenge Twitter Feed](#) - If you are on Twitter, follow the FIRST Tech Challenge Twitter feed for news updates.

[FIRST Tech Challenge Facebook page](#) - If you are on Facebook, follow the FIRST Tech Challenge page for news updates.

[FIRST Tech Challenge YouTube Channel](#) – Contains training videos, Game animations, news clips, and more.

[FIRST Tech Challenge Blog](#) – Weekly articles for the FIRST Tech Challenge community, including Outstanding Volunteer Recognition!

[FIRST Tech Challenge Team Email Blasts](#) – contain the most recent FIRST Tech Challenge news for Teams.

Feedback

We strive to create support materials that are the best they can be. If you have feedback regarding the scorekeeper system FTC Live, please report issues to [FIRST Tech Challenge Github](#)

If you have feedback about this manual, please email firsttechchallenge@firstinspires.org. Thank you!