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2020-2021 FIRST® Tech Challenge

FIRST TECH CHALLENGE

Live_Scorekeeper Manual

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Volunteer Thank You

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	10/13/2020	Initial Release
2	10/29/2020	League workflow through FTC Scoring.

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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 FTC Live 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. 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 FTC Live downloadable software (traditional events) and the cloud-based [FIRST Tech Challenge](#) Scoring system 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 FTCteams@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 *FIRST Tech Challenge Live* (FTC Live).
- 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 FTC Live and displays correctly.

A scorekeeper must be confident and comfortable with the FTC Live and FTC Scoring event configuration process to be able to reliably record results during the hectic pace of a *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 most current version of FTC Live onto the scoring computer, configuring the event with *FIRST Tech Challenge* Scoring system (FTC Scoring), 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. Reading the section [Setting Up a Traditional Event](#) will also prepare you for pre-event responsibilities for the 2020-2021 season.

- Review the [Scorekeeper Quick Start Guide](#) and the Scorekeeper 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. FIRST Tech Challenge Live Setup

Setup of the FTC Live 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 FTC Live.

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 to 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 FTC Live and print the awards ceremony script for the emcee/game announcer.

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

8. Post-Event Responsibilities

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 FIRST Tech Challenge Scoring System and FIRST Tech Challenge Live software

What is the FIRST Tech Challenge Scoring System?

The FTC Scoring system is a cloud-based software that has multiple functions to allow you to input and track vital information during a remote or traditional event.

The system allows a program delivery partner or a team administrator to generate and track the following for a remote event:

- Team information
- Sponsor information
- Match results

For a traditional event, FTC Scoring system is used for:

- Event creation
- League creation
- Event configuration:
 - League creation and setup
 - Team lists
 - Division creation and setup
 - Adding sponsor information

What is the FIRST Tech Challenge Live software

FIRST Tech Challenge Live is a downloadable software program that has multiple functions to allow you to input and track vital information during a traditional event only. It works in coordination with the setup of events in the FTC Scoring system prior to an event.

The system allows a scorekeeper to generate and track the following for a remote event:

- 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)

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

- 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>

Java SE Development Kit 8 Downloads
Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select Subscriptions, expand Technology, and subscribe to Java.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

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Solaris x64	92.13 MB	jdk-8u191-solaris-x64.tar.gz
Windows x86	197.34 MB	jdk-8u191-windows-i586.exe
Windows x64	207.22 MB	jdk-8u191-windows-x64.exe

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 FTC Live. 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 FTC Live.

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).

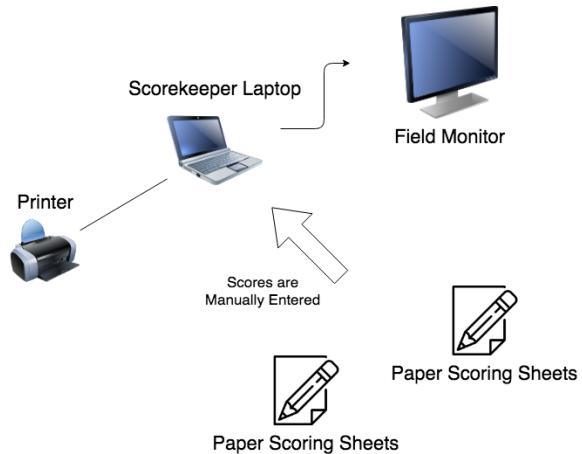


Figure 2 - A very basic layout with paper scoring.

10.2.2. Advanced Configuration with Real-Time Scoring

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

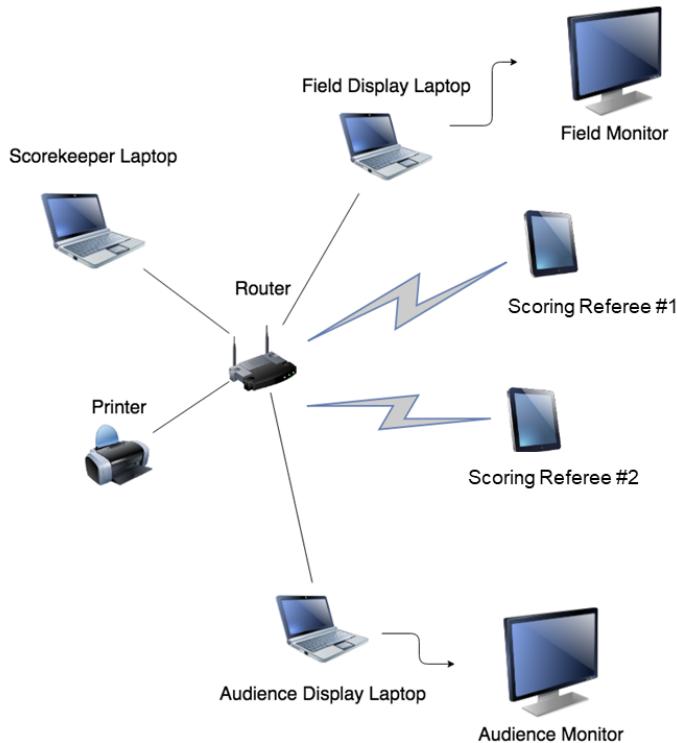


Figure 3 – An advanced configuration with support for real-time tracking.

This advanced configuration includes the following components:

- Scorekeeper Laptop – A laptop that has the FTC 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 FTC Live 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 FTC Live 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 FTC Live.
- 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 FTC Live 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.

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

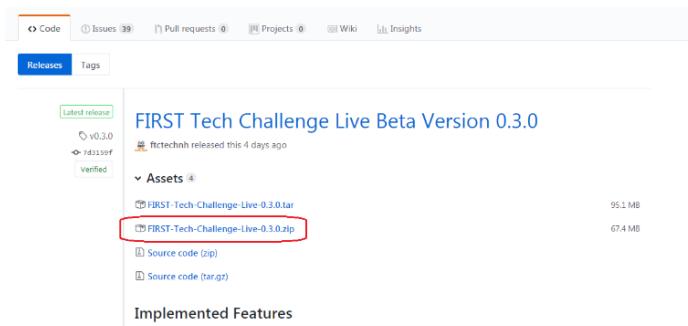


Figure 4 - Releases begin with the phrase "FIRST-Tech-Challenge-Live".

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 select 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-select it to launch the server.

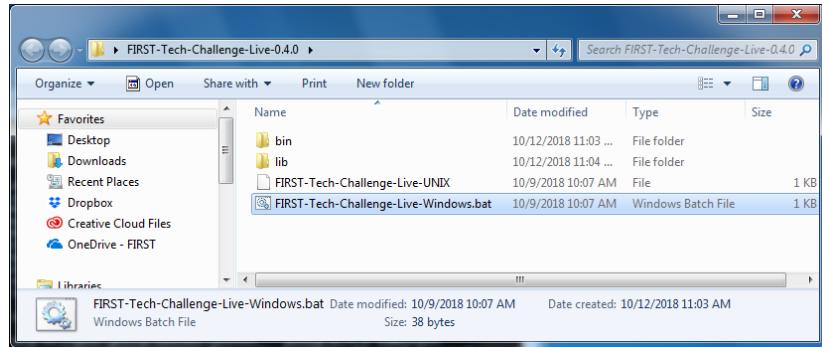


Figure 5 – Double-select the FIRST-Tech-Challenge-Live-Windows.bat batch file to launch server.

It is safe to ignore the warning and select “Run” to run the software.

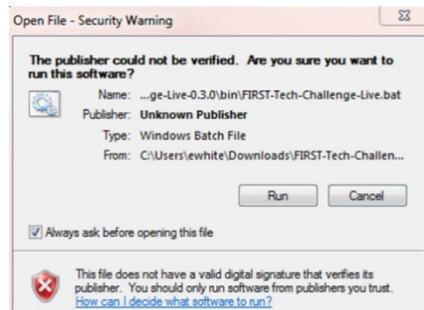


Figure 6 - Windows 7 users might see a warning message similar to this one.

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

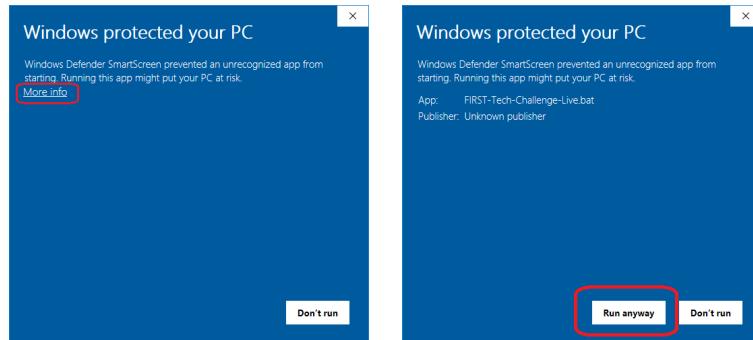


Figure 7 - Select "More info" then "Run anyway" to run the software.

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.

```

C:\WINDOWS\system32\cmd.exe
[main] INFO org.usfirst.ftc.server.SQLiteServerDAO - Creating server.db
[main] INFO org.usfirst.ftc.server.Server - Starting server on port 80
[main] INFO org.usfirst.ftc.server.Server - External Static Files
[main] INFO spark.staticfiles.StaticFilesConfiguration - External StaticResourceHandler configured with folder = ../lib/public
[public]
[main] WARN spark.staticfiles.StaticFileFolder - Registering external static files folder [..lib/public] as [C:/Users/Leahsh0.17.16/Desktop/FIRST-Tech-Challenge-Live-0.3.0/bin/_lib/public]
[main] INFO org.usfirst.ftc.server.Server - Launching browser for OS: Windows 10
[Thread-0] INFO org.eclipse.jetty.util.log - Logging initialized @10265ms
[Thread-0] INFO spark.embeddedserver.jetty.EmbeddedJettyServer - == Spark has ignited ...
[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@219df0d9{HTTP/1.1}{0.0.0.0:80}
[Thread-0] INFO org.eclipse.jetty.server.Server - Started @12733ms

```

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”).

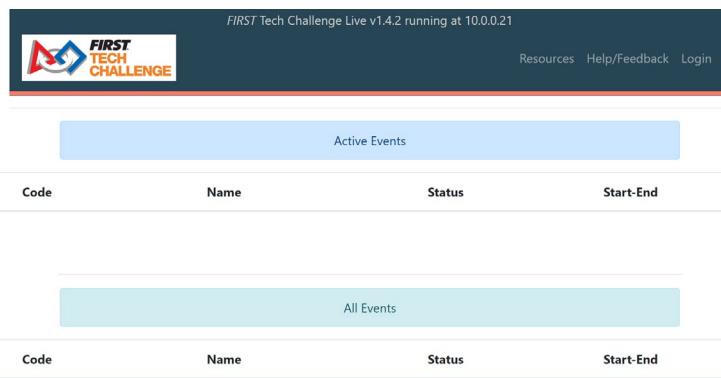


Figure 9 – The software should launch your default browser and display the FTC Live system’s main page.

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 select the file to run the script.

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

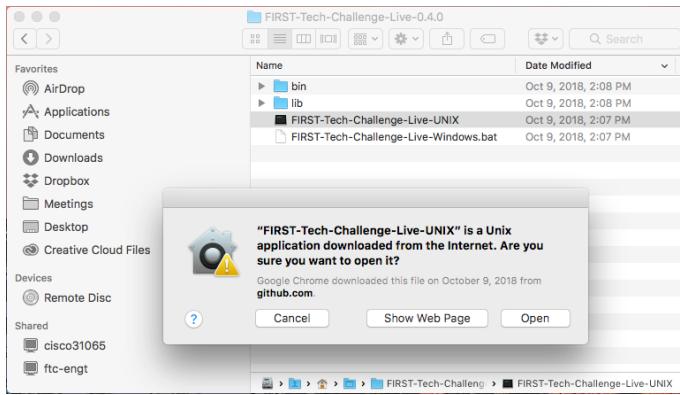


Figure 10 - If prompted, select the "Open" button to allow your Mac to run the software.

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.

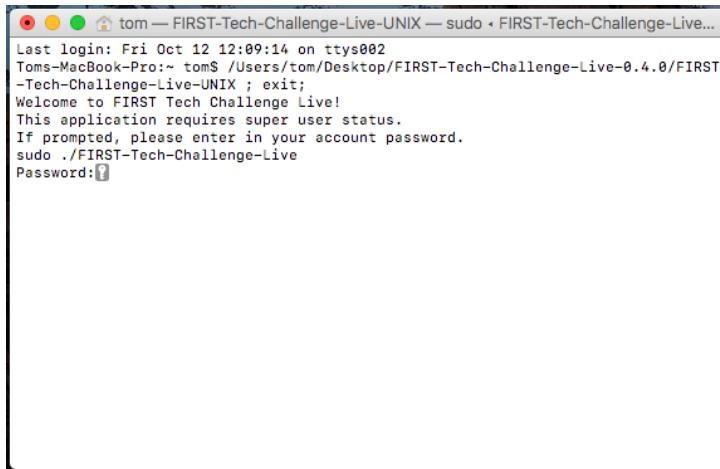
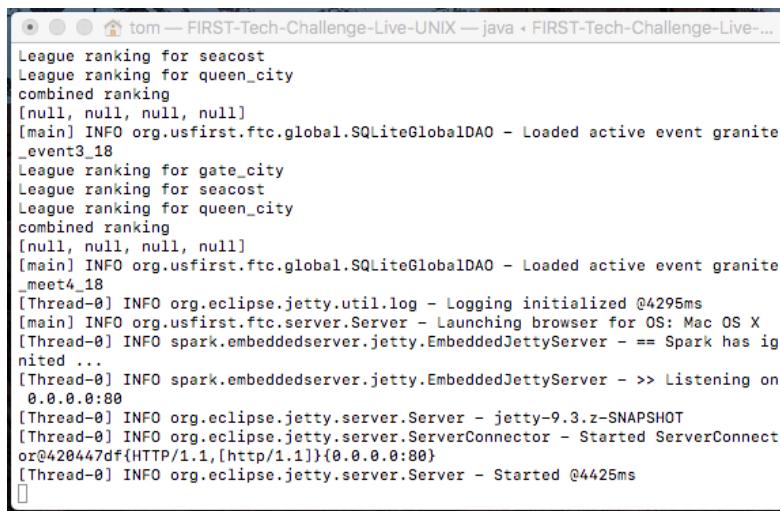


Figure 11 - If prompted, type in your user password for your Mac account and press RETURN.

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.



A screenshot of a terminal window titled "tom — FIRST-Tech-Challenge-Live-UNIX — java < FIRST-Tech-Challenge-Live-...". The window displays a series of log messages from the software. The messages include:

```

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”.

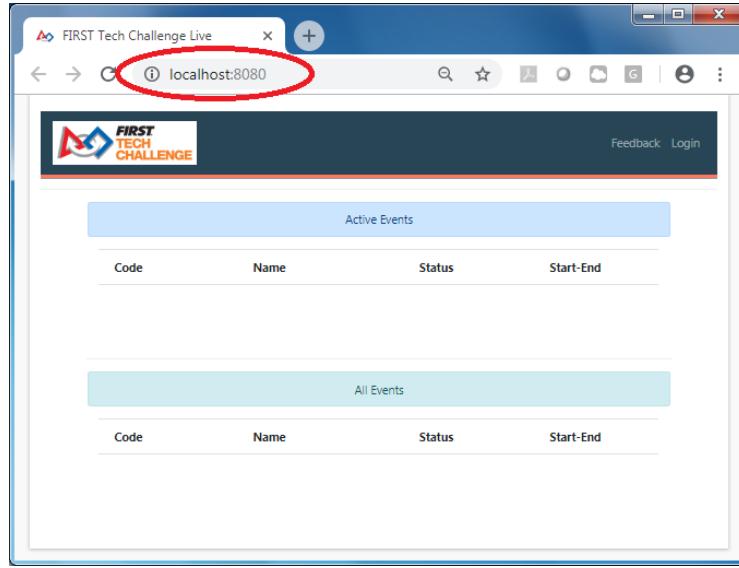


Figure 14 – If you changed the port number, then you must include the new value in the address when accessing the server.

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.

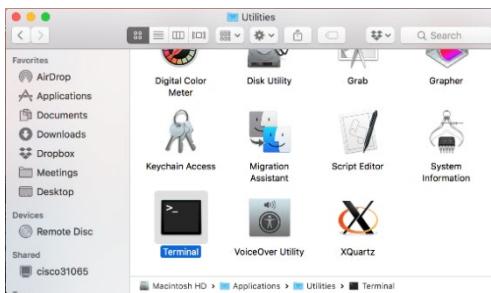


Figure 15- The terminal application is in the “Utilities” subfolder of the “Applications” folder.

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 FTC Live 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.

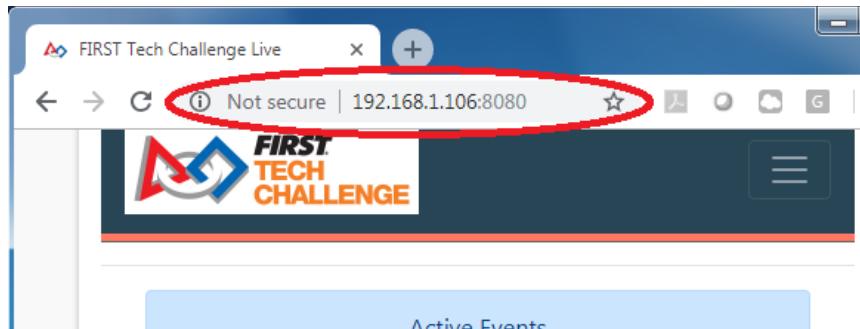


Figure 16 – Specify the port number in the address if your scorekeeping server is using an alternate port number.

12. Setting Up a Traditional Event

12.1. 2020-2021 Season Changes - Setting Up an Event

Setting up a traditional event has a different workflow starting in 2020-2021. Some event setup MUST be done in the cloud-based FTC Scoring system before the event, and some setup can be made easier if done ahead of time.

12.1.1. **Event Creation:** All events are synchronized within the cloud-based FTC Scoring system (ftc-scoring.firstinspires.org) automatically within a day of entry into FIRST's event creation portal. All official events must be created this way. Official events are automatically imported into FTC Live from FTC Scoring system at the start of an event, and are uploaded to it upon completion of the event.

12.1.2. **Event Configuration:** Several parts of event setup MUST be done ahead of time in FTC Scoring system.

Prior to the event, data must be imported into the FTC Live version that will be running at the event. There are three options to accomplish this, depending on who is present and the availability of internet access at the event venue.

Here is a summary table of which method is recommended for a given scenario:

Internet access at setup time?	Event Admin access to FTC Scoring system at set-up time?	Recommended method
YES	YES	Automatic Import (A)
YES	NO	Key-Based Setup (B)
NO	NO	Offline Setup (C)

12.2. Getting Version Number and IP Address

Start by opening FTC Live software. 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).

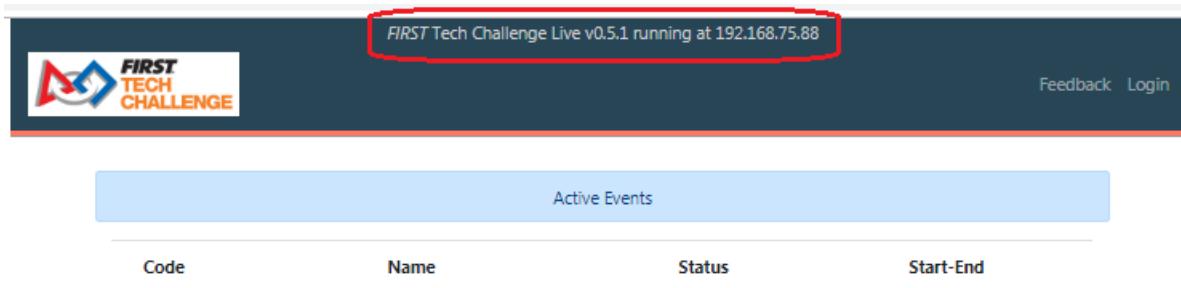


Figure 17 - The software version number and the system IP address

12.2. Logging into FTC Live

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

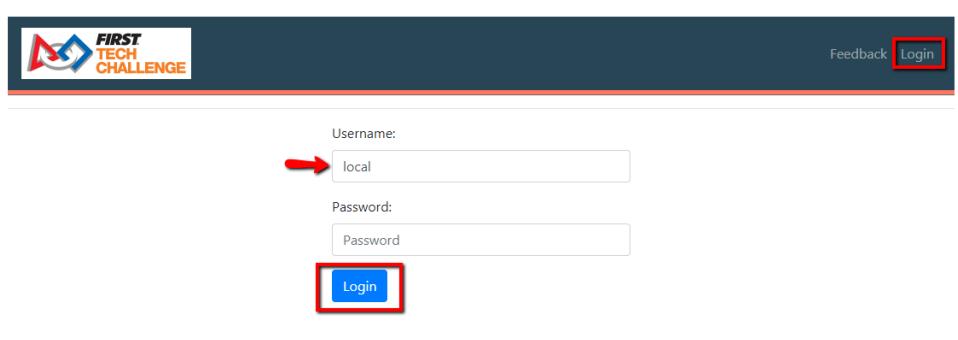


Figure 18 - Log in to the "local" account to gain access to the system.

Important Note: the “local” user account is the primary administrative account for FTC Live download. 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. Logging in with Default Accounts

The default account has username `local` and no password.

Username:	<input type="text" value="Enter username"/>
Password:	<input type="password" value="Password"/>
<input type="button" value="Login"/>	

Figure 19 - The login page allows for a default account.

12.4. Navigating the System’s Home Screen

Once you have logged in to FTC Live (blue banner), the home screen should look like the following image:



Figure 20 - Selecting the FIRST Tech Challenge logo (upper left-hand corner of window) will take you to the FTC Live’s home screen.

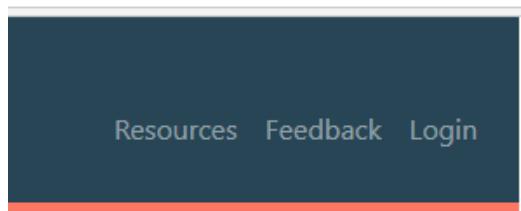


Figure 21 – Feedback, resources, and account info links are available in the upper right-hand corner of the home screen.

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 select the “Hello, local” link to get information about your current user account.

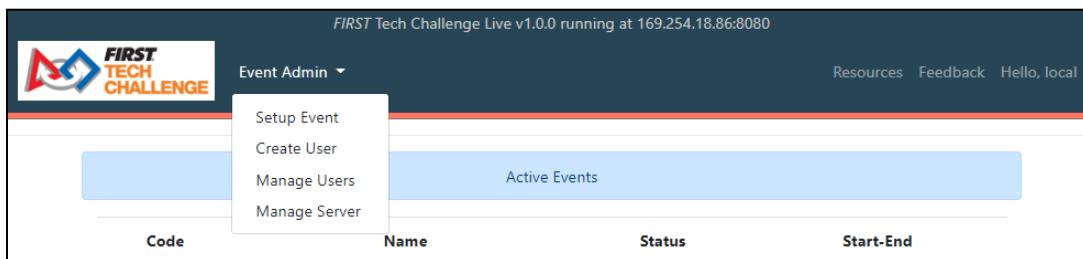


Figure 22 –After login, Event Admin appears.

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

- **Setup Event:** This will allow you to create a single event using an event key found on the “Play Event Locally” page in the *FIRST Tech Challenge* Scoring system or to enter the .db file for an Offline Event.
- **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 FTC Scoring system access.
- **Manage Server:** This allows you to manage the server for an event.

12.5. Set Up an Event – Automatic Import

The FTC Scoring system will automatically import the event into FTC Live. This method requires internet access and event management access to the event on FTC Scoring system, but is the easiest.

1. Run FTC Live. When the browser window pops up, login, but do nothing else. (Top banner is **DARK BLUE**)

The screenshot shows a web browser window for 'FIRST Tech Challenge Live v1.4.2 running at 10.0.0.21'. The top navigation bar includes a logo, a search bar with 'localhost', and links for 'Event Admin', 'Resources', 'Help/Feedback', and 'Hello, local'. Below the header are two tabs: 'Active Events' (selected) and 'All Events'. Each tab has a table with columns: 'Code', 'Name', 'Status', and 'Start-End'. The 'Active Events' table is currently empty.

Figure 23 - Page once logged in

2. Navigate to FTC Scoring system ([FIRST Tech Challenge-scoring.firstinspires.org](https://FTCTechChallenge-scoring.firstinspires.org)): (Top banner is **BLACK**)
 - a. Log in to an account with Event Admin access to the desired event.
 - b. Open the event's home page, then select "Manage Event."

The screenshot shows a web browser window for 'FIRST Tech Challenge Cloud v2.0.0-alpha.1-9-gd3120f2'. The top navigation bar includes a logo, a search bar with 'localhost', and links for 'Resources', 'Help/Feedback', and 'Hello, Elizabeth K McClurg'. The main content area displays event details for '[USNHQT0] USNH Test Qualifier 0 Qualifier'. It shows the date '2020-10-05', location 'Test Arena, 1234 test Dr, USNH Test City 2, Test State USNH, Test', and region 'New Hampshire Region'. Below the event details is a sidebar with a list: 'Manage Event', 'Match List', 'Rankings', and 'Manage Awards'. At the bottom, it says '© 2021 FIRST Tech Challenge powered by AWS'.

Figure 24 - The selected event appears.

- c. Select “Play Event Locally”.

The screenshot shows the 'USNHQT0 Dashboard' for the 'USNH Test Qualifier 0'. At the top, there's a navigation bar with the FIRST Tech Challenge logo, 'Resources', 'Help/Feedback', and a greeting 'Hello, Elizabeth K McClurg'. Below the navigation is a breadcrumb link '< < Back to Event Home'. The main area is titled 'USNHQT0 Dashboard' and 'USNH Test Qualifier 0 Qualifier'. A table lists seven steps with their actions and statuses:

Step	Action	Status
1	Event Users	Optional
2	Event Configuration	Incomplete
3	Add/Edit Teams	0 Teams added
4	Add/Edit Event Sponsors	0 Sponsors added
6	Play Event Locally	Optional
7	Publish Event Results	Incomplete

Figure 25 - On selected event dashboard, select "Play Event Locally"

- d. Under the “Automatic Setup” section at the top, select “Import This Event”.

The screenshot shows the 'Setup Local Play' page under 'Automatic Setup'. At the top, it says 'Found FTC Scoring System version 1.4.2'. In the center, there's a large blue button labeled 'Import This Event' which is circled in red. Below the button, a note reads: 'Note: This will redirect you to the local scoring system. Once import is completed, edits can only be made in the local scoring system.' Further down, there's a 'Manual Setup' section with instructions and a note: 'Give this Event Key to the Scorekeeper or FTA. This key can be entered on the "Setup Event" page of the local scoring system to setup the event. The local scoring system must have internet access. **DO NOT DISTRIBUTE TO ANYONE NOT RUNNING THE SCORING SYSTEM AT THIS EVENT**'. At the bottom, it shows the event key 'Event Key: 49e9cc69-a872-436d-8d7b-87951f18f42e' and a 'Download' button.

Figure 26 - Automatic Setup select "Import This Event"

- e. This operation will open the FTC Live (**DARK BLUE** banner) software and require confirmation of the event setup from FTC Scoring.

Confirm Event Setup	
Please confirm that the event shown is the event you are expecting:	
Code	usnhqt0
Name	USNH Test Qualifier 0
Type	Qualifier
Region	USNH
Dates	Sun Oct 04 2020 - Sun Oct 04 2020
Venue	Test Arena
Address	1234 test Dr
City	USNH Test City 2
State	Test State USNH
Country	Test
League	

Cancel **Confirm**

Figure 27 - Confirm event setup in FTC Live.

- f. Once confirmed, the Event Dashboard appears to continue the process of setting up the event.

Event Dashboard		
Qualifier		
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 - Selected event dashboard in FTC Live.

12.6. Setting up an Event – Key-Based Setup

Using this method, someone with FTC Scoring system, event management permissions for the event gets a key from FTC Scoring, and sends that key to the scorekeeper running FTC Live. In this scenario, FTC Live must have internet access, but the scorekeeper does not require FTC Scoring system permissions.

A. Event Manager (FTC Scoring System):

1. Login to the FTC Scoring system (ftc-scoring.firstinspires.org, **BLACK** banner) with an account with Event Management access.
2. Navigate to the event's home page and click "Manage Event".

The screenshot shows the FTC Scoring system interface. At the top, it says "FIRST Tech Challenge Cloud v2.0.0-alpha.1-9-gd3120f2". Below that is a navigation bar with links for "Resources", "Help/Feedback", and "Hello, Elizabeth K McClurg". The main content area is titled "[USNHQT0] USNH Test Qualifier 0" and "Qualifier". It shows the event date as "2020-10-05" and the location as "Test Arena, 1234 test Dr, USNH Test City 2, Test State USNH, Test". It also indicates that the event is part of the "New Hampshire Region". A sidebar on the left contains links for "Manage Event", "Match List", "Rankings", and "Manage Awards". At the bottom, there is a copyright notice: "© 2021 FIRST Tech Challenge powered by AWS".

Figure 29 - In FTC Scoring, select "Manage Event".

3. Select "Play Event Locally".

The screenshot shows the "USNHQT0 Dashboard" for the "USNH Test Qualifier 0" event. At the top, it says "FIRST Tech Challenge Cloud v2.0.0-alpha.1-9-gd3120f2". Below that is a navigation bar with links for "Resources", "Help/Feedback", and "Hello, Elizabeth K McClurg". There is a link "[<< Back to Event Home](#)". The main content area is titled "USNHQT0 Dashboard" and "USNH Test Qualifier 0 Qualifier". It shows a list of steps with actions and status: Step 1 (Event Users) is Optional; Step 2 (Event Configuration) is Incomplete; Step 3 (Add/Edit Teams) has 0 Teams added; Step 4 (Add/Edit Event Sponsors) has 0 Sponsors added; Step 6 (Play Event Locally) is Optional; and Step 7 (Publish Event Results) is Incomplete. Step 6 is highlighted with a blue background.

Figure 30 - On the selected event dashboard, select "Play Event Locally".

- Under “Manual Setup”, copy the Event Key, and send it securely to the Scorekeeper or FTA. Do not give this key to anyone else.

The screenshot shows the 'Setup Local Play' page of the FTC Scoring System. At the top, there's a navigation bar with the FIRST Tech Challenge logo, 'Resources', 'Help/Feedback', and a greeting 'Hello, Elizabeth K McClurg'. Below the navigation is a link '[<< Back to Event Dashboard](#)'. The main title is 'Setup Local Play' with a subtitle 'Automatic Setup'. A note says 'Found FTC Scoring System version 1.4.2.' Below that is a blue button 'Import This Event'. A note below it states: 'Note: This will redirect you to the local scoring system. Once this process is completed, edits can only be made in the local scoring system.' Under 'Manual Setup', it says: 'Give this Event Key to the Scorekeeper or FTA. This key can be entered on the "Setup Event" page of the local scoring system to setup the event. The local scoring system must have internet access. **DO NOT DISTRIBUTE TO ANYONE NOT RUNNING THE SCORING SYSTEM AT THIS EVENT**'.

Figure 31 - Copy the event key, under "Manual Setup".

B. Scorekeeper (FTC Live)

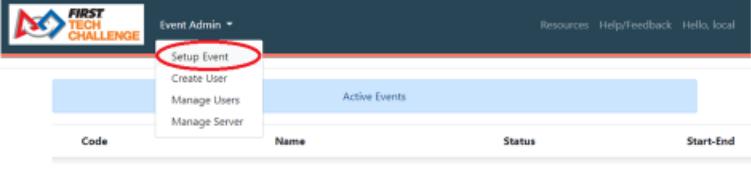
- In FTC Live (DARK BLUE banner), login as local admin.
- From the “Event Admin” dropdown menu at the top, select “Setup Event”.

The screenshot shows the FTC Live interface. At the top, there's a dark blue header with the FIRST Tech Challenge logo, 'Event Admin ▾', 'Resources', 'Help/Feedback', and a greeting 'Hello, local'. A red circle highlights the 'Setup Event' option in the 'Event Admin' dropdown menu. Below the header is a table titled 'Active Events' with columns 'Code', 'Name', 'Status', and 'Start-End'. The table currently has no data.

Figure 32 - Under "Event Admin," select "Setup Event."

3. Enter the Event Key sent by the Event Manager and click "Submit".

3. Set Up an Event – Key-Based Set Up



From the "Event Admin" dropdown menu at the top, select "Setup Event":

FIRST TECH CHALLENGE

Event Admin ▾

- Setup Event** (highlighted with a red circle)
- Create User
- Manage Users
- Manage Server

Resources Help/Feedback Hello, local

Active Events

Code	Name	Status	Start-End

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Setup Event

If you have internet access, you can setup an event by entering the Event Key found on the event's "Play Event Locally" page on FTC Cloud. If you do not have internet access, proceed to "Offline Setup".

Event Key

Submit

[Offline Setup >>](#)

Note: If you are testing the system please skip this step and continue to Offline Setup. If you do not have an Event key, ask your Program Delivery Partner or Event Manager. If they are 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, **especially League Meets**.

Figure 33 - Event Key entry.

4. It will show the event details and ask for confirmation. Make sure this is the correct event, and then hit "Confirm".

12.7. Set Up an Event – Offline Event

Using this method, an Event Manager downloads a file from the FTC Scoring system, and sends it to the Scorekeeper/FTA or brings it to the event. This method does not require internet access at the event.

A. Event Manager (FTC Scoring System):

1. Prior to the event, login to the FTC Scoring system (**BLACK** banner) with an Event Management account.
2. Navigate to the event's home page and click "Manage Event".

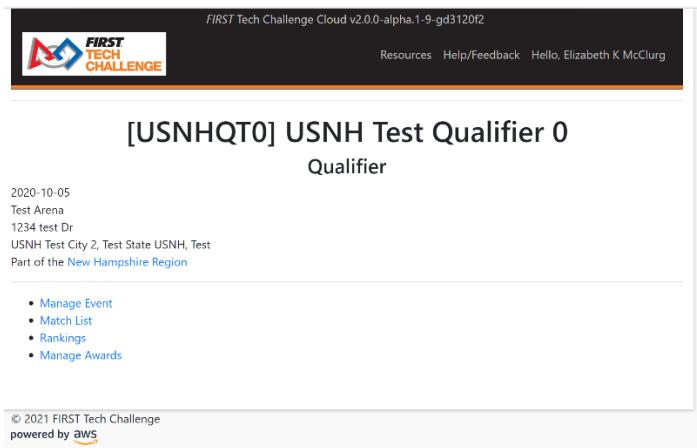


Figure 34 - "Manage Event" for selected event.

3. Select “Play Event Locally”.

The screenshot shows the 'USNHQT0 Dashboard' for the 'USNH Test Qualifier 0 Qualifier'. It features a step-by-step checklist with columns for 'Step', 'Action', and 'Status'. Step 1: 'Event Users' (Optional). Step 2: 'Event Configuration' (Incomplete). Step 3: 'Add/Edit Teams' (0 Teams added). Step 4: 'Add/Edit Event Sponsors' (0 Sponsors added). Step 6: 'Play Event Locally' (Optional). Step 7: 'Publish Event Results' (Incomplete). The 'Play Event Locally' button is highlighted with a red border.

Step	Action	Status
1	Event Users	Optional
2	Event Configuration	Incomplete
3	Add/Edit Teams	0 Teams added
4	Add/Edit Event Sponsors	0 Sponsors added
6	Play Event Locally	Optional
7	Publish Event Results	Incomplete

Figure 35 - On the selected event dashboard, select "Play Event Locally".

- Under “Offline Setup”, select “Download”. It will download a file to your computer. Send this file to the person running the FTC Live or bring it to the event on a flash drive. Do not give this key to anyone not running FTC for this event.

The screenshot shows the 'Setup Local Play' page of the Scorekeeper Manual. At the top, there's a navigation bar with the FIRST Tech Challenge logo, 'Resources', 'Help/Feedback', and a greeting 'Hello, Elizabeth K McClurg'. Below the navigation, there are two main sections: 'Automatic Setup' and 'Manual Setup'. Under 'Automatic Setup', there's a note: 'Note: This will redirect you to the local scoring system. Once this process is completed, edits can only be made in the local scoring system.' Below this is a blue 'Import This Event' button. Under 'Manual Setup', there's a note: 'Give this Event Key to the Scorekeeper or FTA. This key can be entered on the "Setup Event" page of the local scoring system to setup the event. The local scoring system must have internet access. **DO NOT DISTRIBUTE TO ANYONE NOT RUNNING THE SCORING SYSTEM AT THIS EVENT**' followed by the event key '49e9cc69-a872-436d-8d7b-87951f18f42e'. At the bottom, there's an 'Offline Setup' section with a 'Download' button.

Figure 36 - Download .db file and send to scorekeeper.

B. Scorekeeper (FTC Live)

- In FTC Live (**DARK BLUE** banner), login as local admin.
- From the Event Admin, select “Setup Event”, then select Offline Setup.

The screenshot shows the 'Setup Event' page in FTC Live. It features a text input field labeled 'Event Key' and a 'Submit' button. Below the input field is a link 'Offline Setup >>'. A note at the bottom states: 'Note: If you are testing the system please skip this step and continue to Offline Setup. If you do not have an Event key, ask your Program Delivery Partner or Event Manager. If they are 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, especially League Meets.'

Figure 37 - In FTC Live, select the "Offline Setup" option.

- The .db file upload page opens, select the Choose File option, then go to the location of the .db file (USB).

The screenshot shows the 'Setup Event' page again, but this time the 'Choose File' button is highlighted. A note at the top says: 'Upload the .db file for this event. This file can be downloaded from the event's "Play Event Locally" page on FTC Cloud. Your Program Delivery Partner or Event Manager should have this file.' Below the 'Choose File' button is another 'Setup Event' button. A note at the bottom states: 'Note: If you are testing the system please skip this step. If you do not have an event file, ask your Program Delivery Partner or Event Manager. If they are 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, especially League Meets.'

Figure 38 - Upload the .db file.

4. Once the file has been selected, select the “Setup Event” button to continue.

Setup Event

Upload the .db file for this event. This file can be downloaded from the event's "Play Event Locally" page on FTC Cloud. Your Program Delivery Partner or Event Manager should have this file.

Choose File USNHLM0.db Setup Event

[Manual Setup >>](#)

Note: If you are testing the system please skip this step. If you do not have an event file, ask your Program Delivery Partner or Event Manager. If they are 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, especially League Meets.

Figure 39 - Select "Setup Event".

5. Review the information for the selected event and Confirm or Cancel to begin scorekeeping. The dashboard for the event should appear once Confirm is selected.

Confirm Event Setup

Please confirm that the event shown is the event you are expecting:

Code	usnhlm0
Name	USNH Test League Meet 0
Type	League Meet
Region	USNH
Dates	Mon Sep 14 2020 - Mon Sep 14 2020
Venue	Test Arena
Address	1234 test Dr
City	USNH Test City 7
State	Test State USNH
Country	Test
League	

Cancel Confirm

Figure 40 - Confirm the details of the event are correct.

12.8. FTC Live Event Dashboard

Once you have created a new event, FTC Live should display the *Event Dashboard*. You can also jump to the Event Dashboard for the event by selecting the event's "Dashboard" option from the "Event Admin" drop down menu.

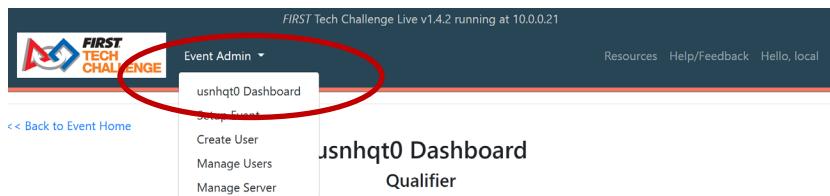


Figure 41 – You can use the Event Admin menu to navigate to the Dashboard if you have an event currently selected.

Each step has an action and a status listed on the Event Dashboard. You can select a button to perform an action.

ԱՇԽԱՎԱ ՎԱՏԻՆՈՒՅՆ			Qualifier
	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 - Event Dashboard.

Note: Be sure to select “Send Results to FIRST.”

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

12.9. Creating Default User Accounts

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

FIRST Tech Challenge Live v1.4.2 running at 10.0.0.21

Event Admin ▾ Resources Help/Feedback Hello, local

<< Back to Dashboard Generate New Random Accounts Reset Accounts

USNH Test Qualifier 0 Default Accounts

These accounts only have permissions to access this event:
usnhqt0

FIRST Tech Challenge Live © 2018-2020 FIRST®

Figure 43 – 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 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.

Username	Password
usnhqt0_audienceisplay	polish697
usnhqt0_eventadmin	frame802
usnhqt0_fielddisplay1	dance401
usnhqt0_inspector1	chimpanzee997
usnhqt0_inspector2	attendant727
usnhqt0_inspector3	traditionalism942

Figure 44 - Default user accounts generated by the system. Print a hard copy.

The password and access permissions for a user account can be changed by an event administrator by selecting 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_audienceisplay	Manage User
nhchampionship2019_eventadmin	Manage User
nhchampionship2019_eventmanager	Manage User
nhchampionship2019_fielddisplay1	Manage User

Figure 45 - Manage Users to change a user account.

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

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

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

12.10. Adding/Editing Teams for an Event

Important Note: It is recommended that this step be completed in the cloud-based FTC Scoring system NOT FTC Live, though the process is almost the same. Also, adding teams for leagues MUST be done in FTC Scoring system when setting up a league. Teams should not switch from their original league to another league.

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

Note: FTC Live comes with a pre-populated list of *FIRST* Tech Challenge teams that you can search.

You may be prompted to do a “Data Download” to update the populated teams. Follow the prompts.

12.10.1. Adding a Team Individually

Select 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 46 - Enter Team Number and hit "Add".

- If the FTC Live 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.
- 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 selecting the “Find by State/Province” tab.
- If you are done adding and editing teams, press the “Done” button.

Number	Name	City	State/ Province	Country	Rookie Year	Advanced	Division	Edit
8888	Infinity Factor	Hollis	NH	USA	2014		0	<input checked="" type="checkbox"/> <input type="radio"/>
11482	MaverBITS	Bedford	NH	USA	2016		0	<input checked="" type="checkbox"/> <input type="radio"/>

Figure 47 - Use the Edit or Delete buttons to modify or remove a team.

12.10.2. Adding Teams by State or Province

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

- FTC Live 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 48 - Use the Country and State/Province controls to select your country and state/province.

- Check boxes to add teams to the event (turns purple).
- Select single teams with the “Add Individually” tab.
- If you are done adding and editing teams, press the “Done” button.

<< Back

Adding to event 'test_event_1'

	Number	Name	Affiliation	City	State/ Province	Country	Rookie Year
<input checked="" type="checkbox"/>	7078	0v3r1y K0mp13x	&Family/Community	Dunbarton	New Hampshire	USA	2013
<input checked="" type="checkbox"/>	7135	Hornets	Proctor Academy	Andover	New Hampshire	USA	2013
<input checked="" type="checkbox"/>	7804	Tie Fighters	North East Precision CNC & Dover Middle School	Dover	New Hampshire	USA	2013
<input checked="" type="checkbox"/>	8089	Mainframe Meltdown	Kingswood Reg Middle School	Wolfeboro	New Hampshire	USA	2013
<input checked="" type="checkbox"/>	8888	Infinity Factor	Hollis Montessori School	Hollis	New Hampshire	USA	2014
<input type="checkbox"/>	9181	MasterMinds	Family Friends	Nashua	New Hampshire	USA	2014
<input type="checkbox"/>	10251	36 Cents	Windup Robotics 4H Club & 4-H Youth Development Organization	Windham	New Hampshire	USA	2015
<input type="checkbox"/>	10660	HBMS Silver Knights 10660	Hollis Brookline Middle School	Hollis	New Hampshire	USA	2015
<input type="checkbox"/>	11103	Tech Tonix	Family/Community	Bedford	New Hampshire	USA	2016
<input type="checkbox"/>	11114	Ghitar Free	Family/Community	Hollis	New Hampshire	USA	2016

Figure 49 – Select teams and then select “Done” to add them.

12.10.3. Importing a List of Teams

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

- FTC Live 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.

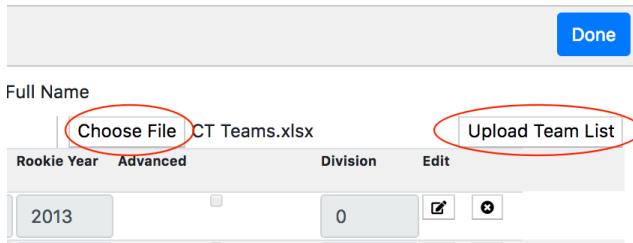


Figure 50 - Use the "Choose File" and "Upload Team List" buttons to select and upload a team list.

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

12.10.4. 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.

12.11. 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: Collins Aerospace
- FIRST Tech Challenge Official CAD and Remote Collaboration Sponsor: Onshape, a PTC Company.

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.

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

A screenshot of a web-based application titled 'FIRST Tech Challenge Live v0.8.3 running at 192.168.74.102'. The header includes the FIRST Tech Challenge logo, 'Event Admin', 'Resources', 'Feedback', and 'Hello, local'. Below the header is a 'Back to Dashboard' link and a 'Browse...' button. A large 'Sponsors:' heading is followed by a table with columns: 'Name', 'Level', 'Logo', and 'Actions' (with 'Add', 'Edit', and 'Delete' buttons). One row is visible for 'FTC' with 'Event' level and a delete icon.

Figure 51 - You can add/edit sponsors for an event.

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

The screenshot shows a form for adding a sponsor. It includes fields for 'Sponsor Name' (with a placeholder 'Sponsor Name'), 'Level' (set to 'Regional'), and 'Logo' (with options to 'Choose File' or 'Import Logo'). A note below the logo field states: 'There are maximum size limits for the sponsor logo. The image will shrink automatically if needed.' A blue 'Create Sponsor' button is at the bottom.

Figure 52 - 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).
- Select the “Create Sponsor” button to create the new sponsor.
- 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”).

12.12. 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, it displays the FIRST Tech Challenge logo, the user role 'Event Admin', and navigation links for 'Resources', 'Help/Feedback', and 'Hello, local'. Below this, there are fields for 'Matches per Team' (set to 5), 'Cycle Time (min)' (set to 7), and a 'Default' button. A note says 'Total Matches Required: 5'. There is also a checked checkbox 'Keep Match Start Times Private'. Under 'Schedule:', there is a table for a single match block with columns for 'Start Time' (2020/09/22 14:14), '# Matches' (5), and 'End Time' (2020/09/22 14:49). Buttons for 'Add Match Block' and 'Add Break' are available. At the bottom, it shows 'Total Matches Scheduled: 5 / 5' and buttons for 'Save', 'Preview', and 'Run Matchmaker'.

Figure 53 - 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	Remove
# Matches:	5	
End Time	2018/10/04 11:35	
Label		lunch
Start Time	2018/10/04 11:35	Remove
Duration (min):	60	
End Time	2018/10/04 12:35	
Start Time	2018/10/04 12:35	Remove
# Matches:	5	
End Time	2018/10/04 13:10	
Add Match Block Add Break		

Total Matches Scheduled: 10 / 10

Figure 54 - 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.

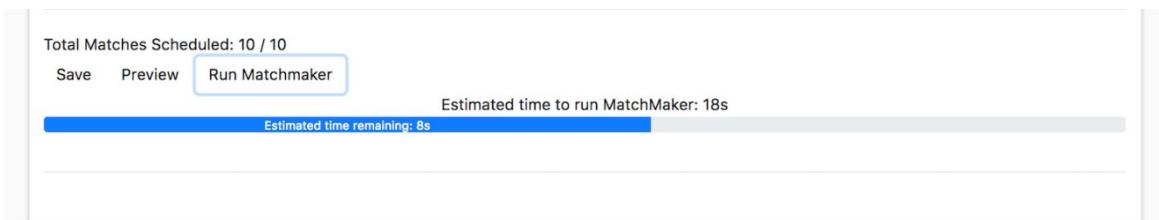


Figure 55 - Push the Run Matchmaker button to generate the match list for your event.

- 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.

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

12.13. 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 57 - Dashboard with Send Results button.

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

Figure 58 - 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.

Figure 59 - 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.

Figure 60 -Copy/Paste the 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 in FTC Live, it is helpful to look at the workflow for scoring an event.

13.1.1. Scoring Using Paper Scoresheets

FTC Live 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 selecting 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.

usnhqt0: USNH Test Qualifier 0

Event Info

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

Inspection

- [Robot Inspection](#)
- [Field Inspection](#)

Referee Score Tracking

- [Red Alliance Score Tracking](#)
- [Blue Alliance Score Tracking](#)

Displays

- [Scoring/Timing Displays](#)

Judging

Figure 61 - Event Home page.

13.3. Match Control Page

Select the “Match Control Page” link to display the Match Control Page.

The screenshot shows the Match Control page for the event "usnhqt0". At the top, there are buttons for "Load Next Match", "Show Preview", "Randomize Field", "Show Random", "Show Match", "Start Match", and "Commit & Post Last Match". Below this is a table with columns for Match, Field, State, Red Score, Red 1, Red 2, Red 3, Blue 1, Blue 2, Blue 3, Blue Score, Play, and Enter Scores. The table lists five qualification matches, all of which are currently UNPLAYED.

Schedule	Incomplete Matches			Score Edit			Active Match			Settings	Alliance Selection		Video Switch
Match	Field	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Play	Enter Scores	
Qualification 1	1	UNPLAYED	0	7078	8089		7135	7804		0	Play	Enter Scores	
Qualification 2	1	UNPLAYED	0	7078	7804		8089	7135		0	Play	Enter Scores	
Qualification 3	1	UNPLAYED	0	8089	7135		7078	7804		0	Play	Enter Scores	
Qualification 4	1	UNPLAYED	0	7804	7135		8089	7078		0	Play	Enter Scores	
Qualification 5	1	UNPLAYED	0	7135	7078		7804	8089		0	Play	Enter Scores	

Figure 62 - 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 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 63 - 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 the match to 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.

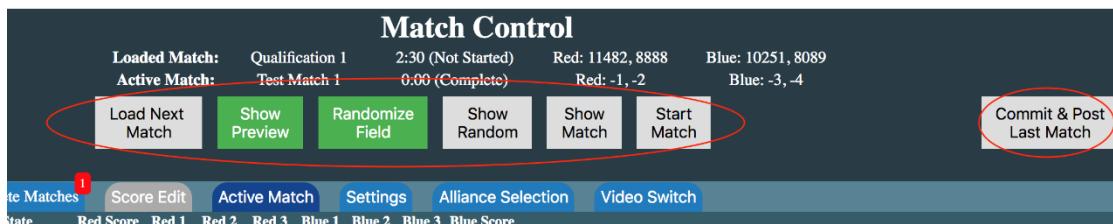
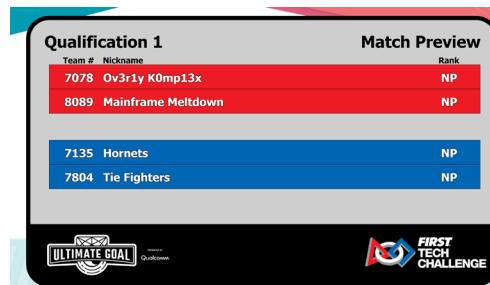
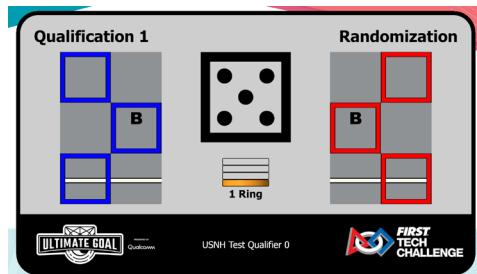


Figure 64 - Buttons allow for control of the match flow.

- 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:

The screenshot shows the Match Control Page with the 'Schedule' tab highlighted. The main table displays a single match entry for 'Qualification 1' with status 'UNPLAYED'. The table includes columns for Match, State, Red Score, Red 1, Red 2, Red 3, Blue 1, Blue 2, Blue 3, and Blue Score. Buttons for 'Play' and 'Enter Scores' are also visible. Above the table, there are tabs for Match, Preview, Field, Random, and Match. Below the table, there are tabs for Incomplete Matches (with a red circle and '0'), Score Edit, Active Match, Settings, Alliance Selection, and Video Switch.

Figure 65 - 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).

The screenshot shows the Match Control Page with the 'Active Match' tab highlighted. The top section displays match details: 'Loaded Match: Active Match: Qualification 1 0:00 (Complete)', 'Red: 7078, 8089', and 'Blue: 7135, 7804'. Below this are buttons for 'Load Next Match', 'Show Preview', 'Randomize Field', 'Show Random', 'Show Match', and 'Start Match'. The main table below the tabs is identical to the one in the Schedule tab, showing the same match data for 'Qualification 1'.

- 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.

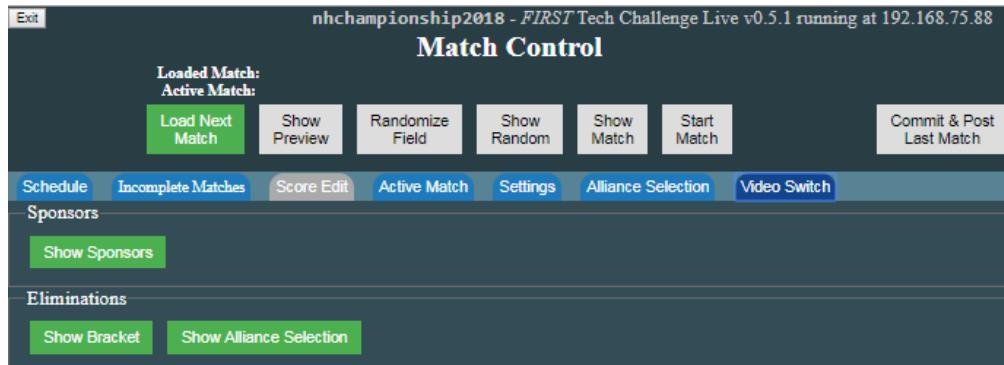


Figure 66 - Select the "Show Sponsors" button to display the sponsor information on Audience Displays.

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 67 - 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.

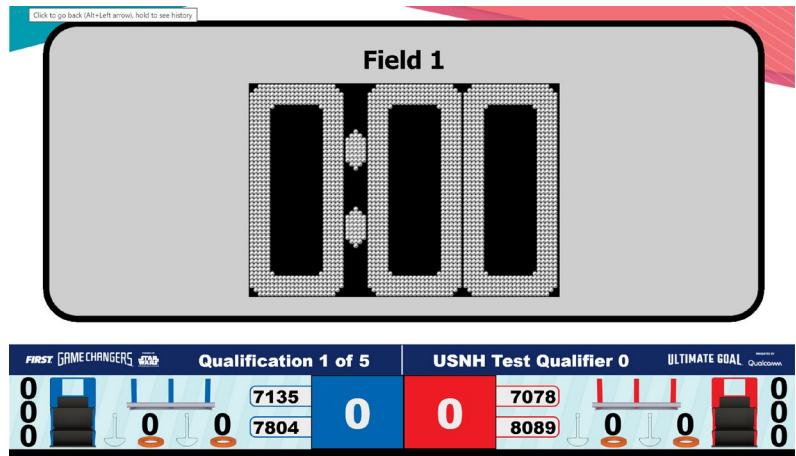


Figure 68 - Field Display

- **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.

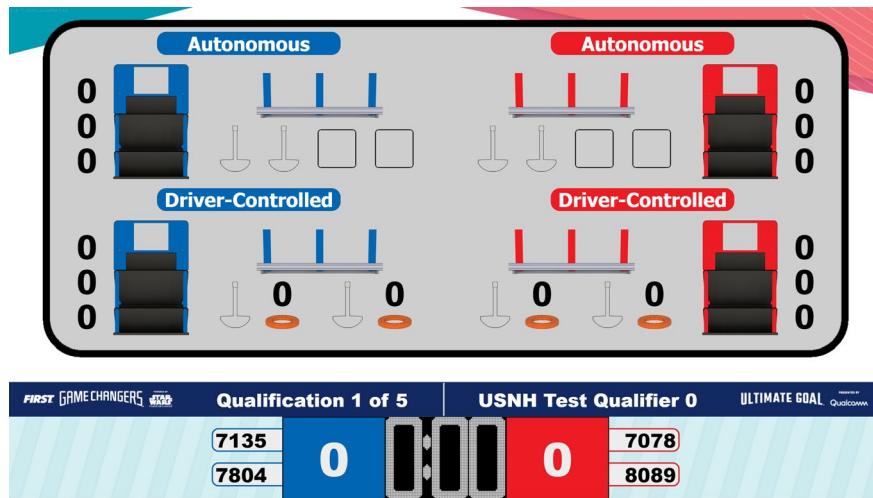


Figure 69 - Audience Display.

- **Overlay Display** – 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.

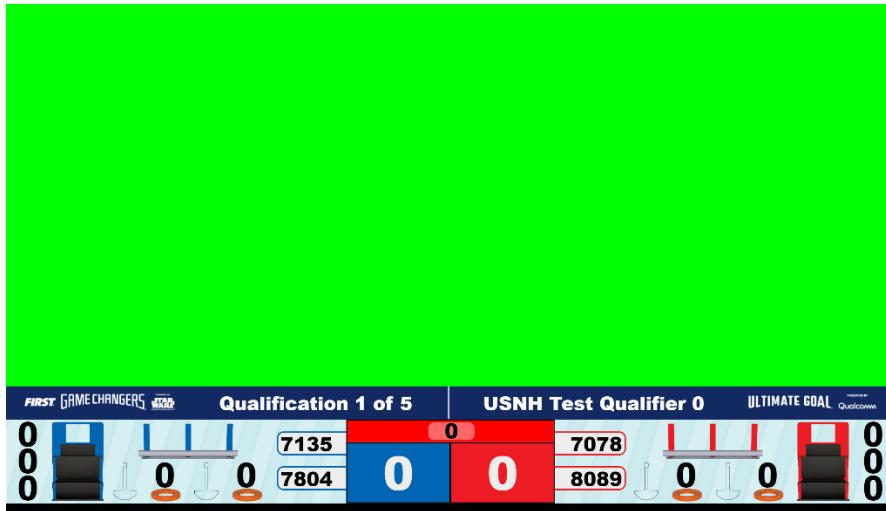


Figure 70 - Overlay Display mode.

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 Display 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 FTC Live 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.
- Type in the IP address to navigate to the system server.

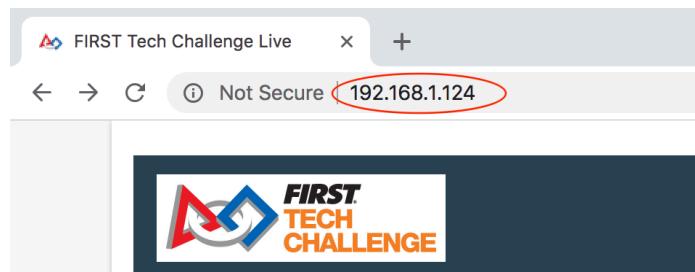
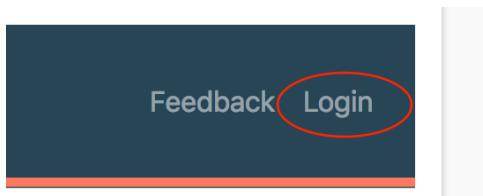


Figure 71 - Type in the IP address to navigate to your system server.

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



- In the Event Home page for your selected event, select the “Scoring/Timing Displays” link.
- 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.

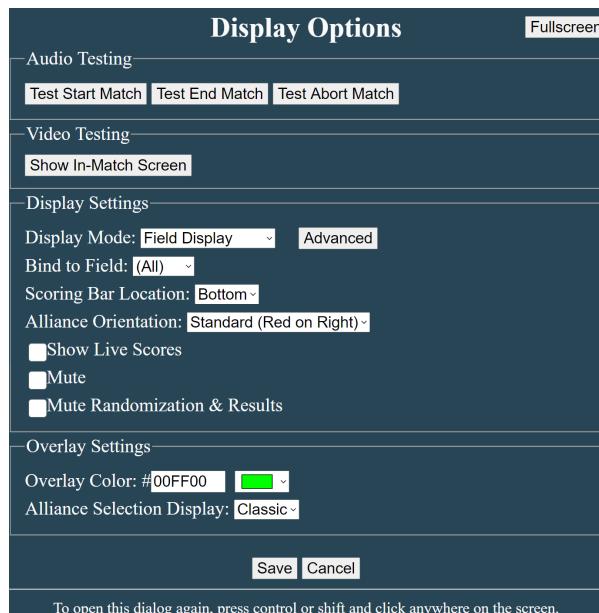


Figure 72 - Display Settings Dialog.

- The “Audio Testing” buttons at the top can be used to play the game audio cues to test the PA system.
- Select which 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 are not using 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.

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

13.5. Scoring Using Paper Scoresheets

FTC Live 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 FTC Live server, the Match Control laptop, *and* as the Audience Display. Referees use paper sheets to score the matches. These are found in the Resources folder or [Scoresheets](#). 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.

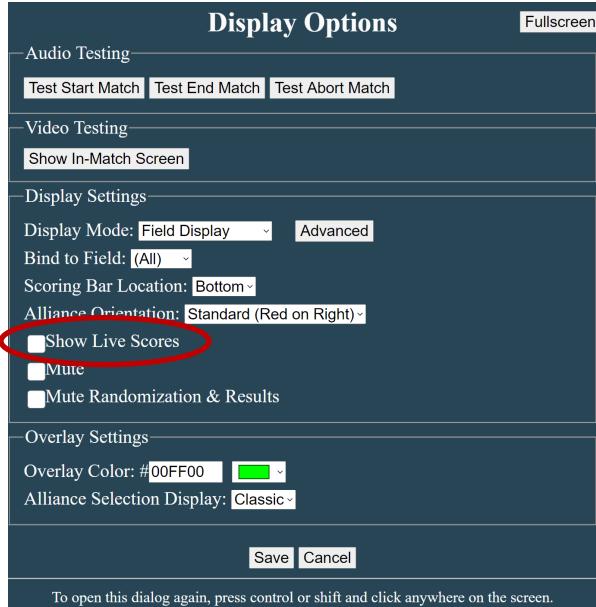


Figure 73 - Make sure the "Show Live Scores" option is disabled (unchecked).

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. At the top, it says 'usnhqt0 - FIRST Tech Challenge Live vv2.0.0-alpha.1-12-g415e27d running at 10.0.0.21'. Below that are buttons for 'Load Next Match' (circled in red), 'Show Preview', 'Randomize Field', 'Show Random', 'Show Match', 'Start Match', and 'Commit & Post Last Match'. The main area has tabs for 'Schedule', 'Incomplete Matches', 'Score Edit', 'Active Match', 'Settings', 'Alliance Selection', and 'Video Switch'. The 'Score Edit' tab is active. Below is a table with columns: Match, Field, State, Red Score, Red 1, Red 2, Red 3, Blue 1, Blue 2, Blue 3, Blue Score, Play, and Enter Scores. The table rows show Qualification matches 1 through 5, all in UNPLAYED state. The 'Play' and 'Enter Scores' buttons for each row are also circled in red.

Figure 74 - 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.

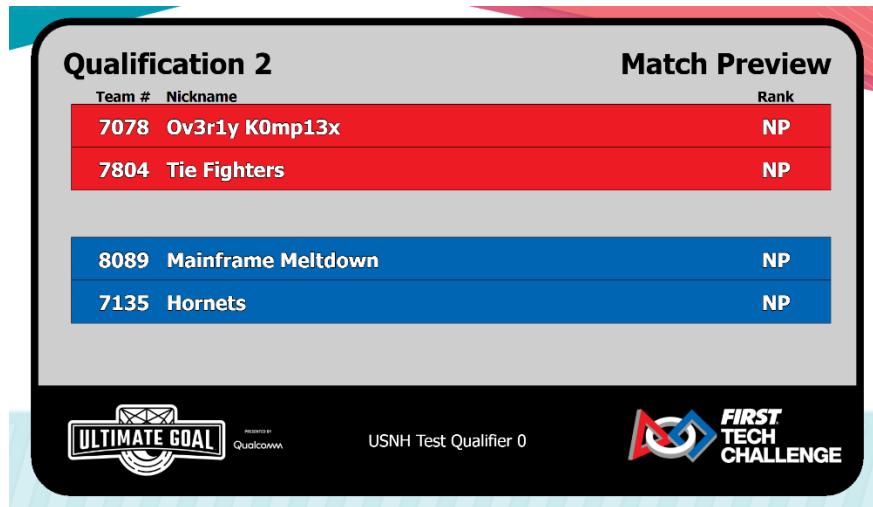


Figure 75 - The Audience Display should display match info after the "Show Preview" button has been pressed.

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.

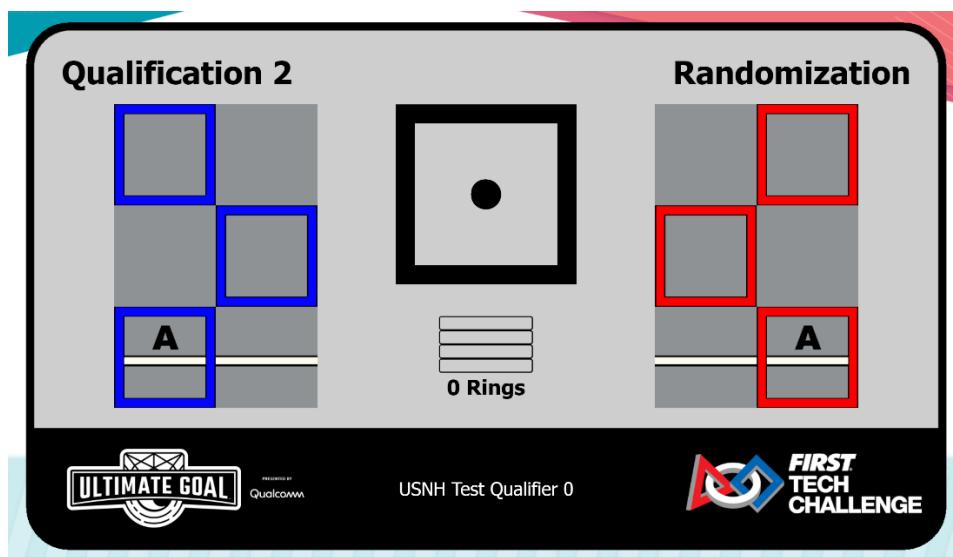


Figure 76 – After the “Show Random” button has been pressed, the Audience Display will show randomization info.

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.

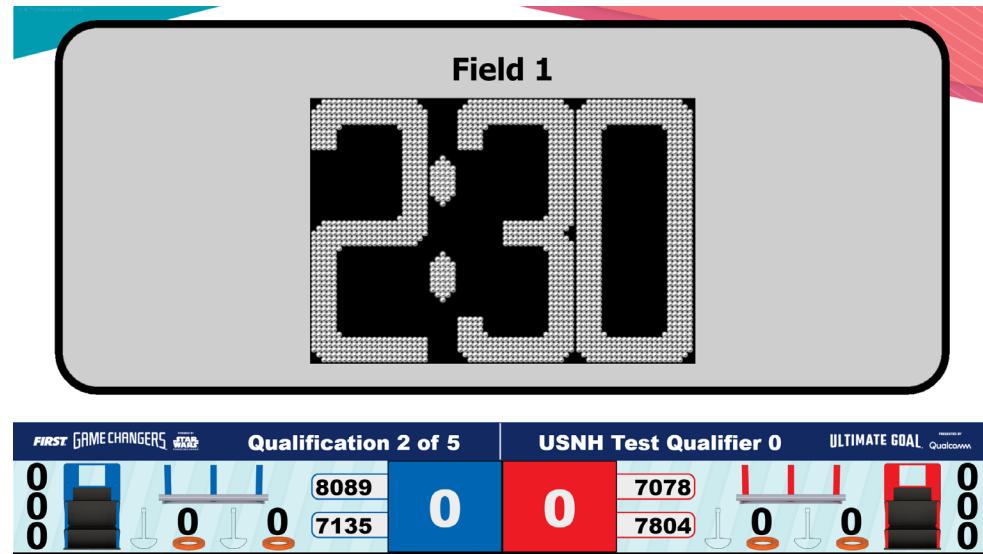


Figure 77 - Pushing the "Show Match" button will display the Match information and timer on the Audience Display.

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

Note: The “Start Match” button might be colored red. Please disregard, because it is “waiting” for pre-match information from a score tracking tablet for live scoring.



Figure 78 - 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.

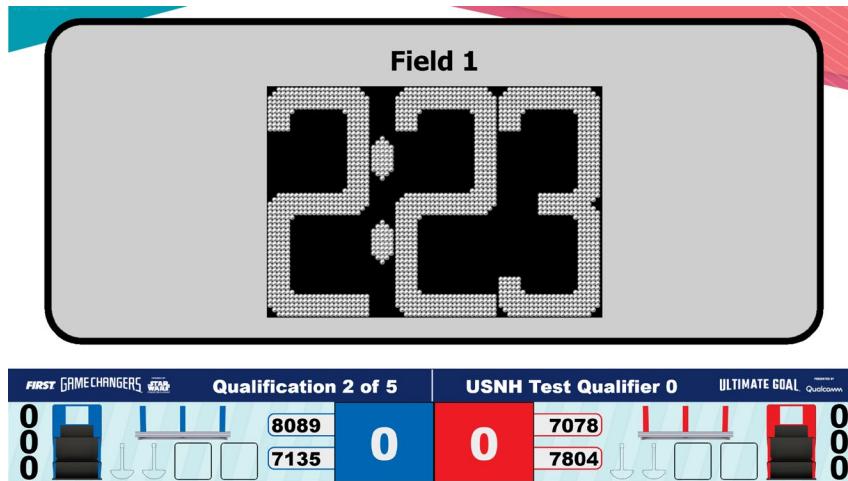


Figure 79 - The audio cue should play and the timer should start counting down at the start of the match.

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

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



Figure 81 - Select the "here" button of the phrase "To edit click here" to edit the scores.

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

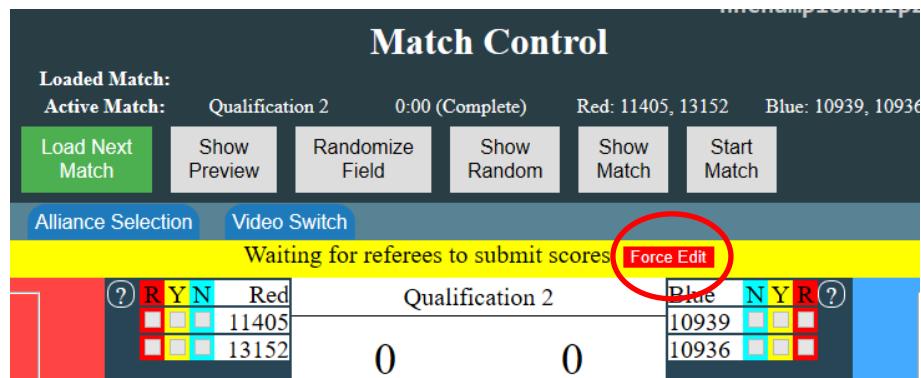


Figure 82 - Click "Force Edit" button to force an edit of the scores.

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.

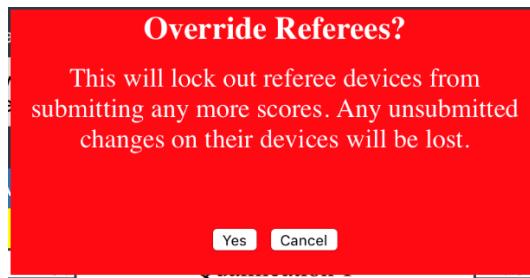


Figure 83 - Hit "Yes" to override the referees and enter the scores manually.

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 FTC Live system.

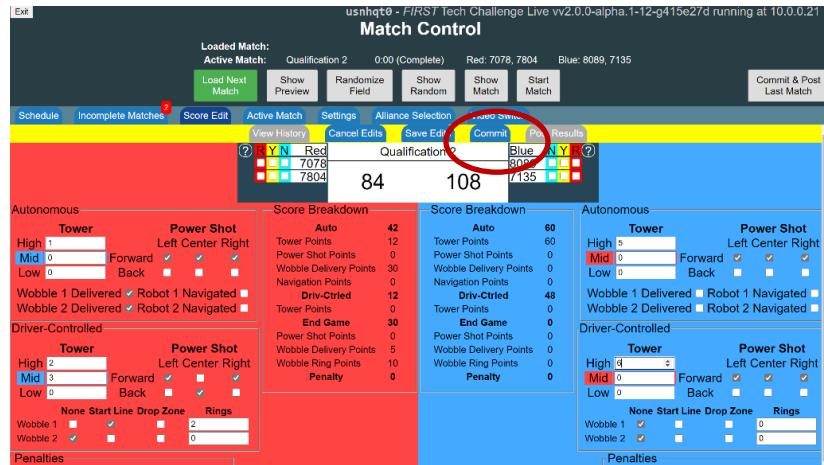


Figure 84 - The scorekeeper should edit the scores, then push the "Commit" button to commit them to the system.

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.

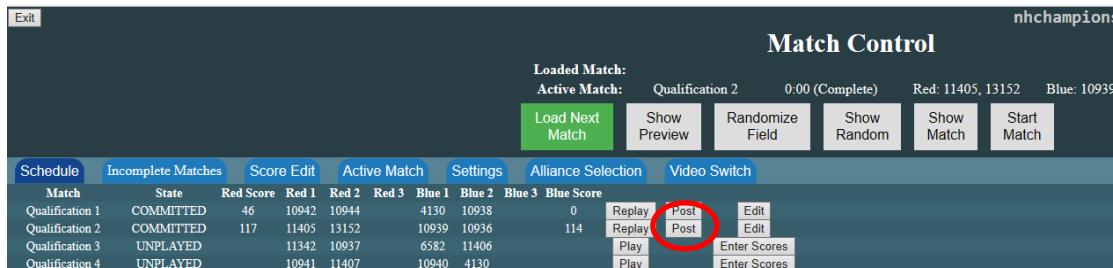


Figure 85 - Press the "Post" button next to the match to display the Match results to the Audience Display.

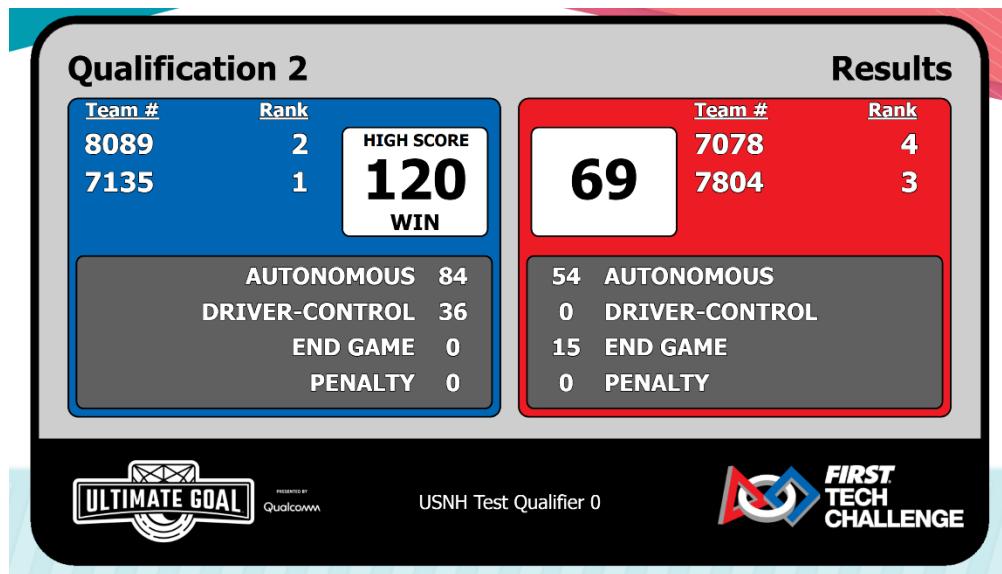


Figure 86 - The Audience Display should show the match results.

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 FTC Live server. You also will need a user id and password that has referee (i.e., score tracking) permission for the event.

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 FTC Live 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 FTC Live server.

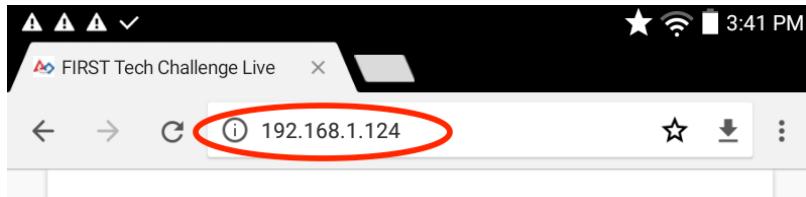


Figure 87 - Type in the IP address (which you can get from your IT admin) of the server in the browser's address bar.

- If you successfully connect to the FTC Live server, you will see its home page. Select the upper right-hand menu icon to display the menu options for the home page. The “Resources” “Feedback” and “Login” links should appear towards the top of the screen.

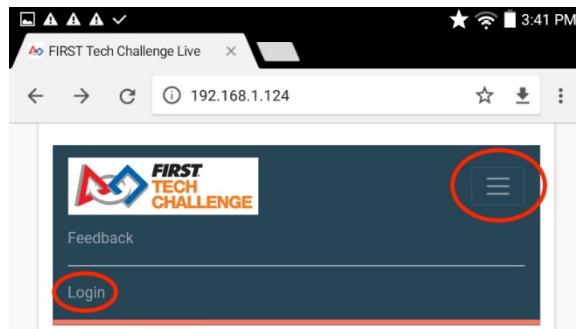
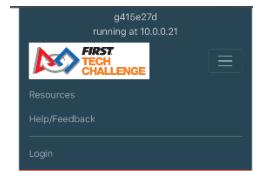


Figure 88 - Select upper right-hand menu icon to display the "Feedback" and "Login" menu options.

- Select 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 Event Info and Referee Score Tracking



usnhqt0: USNH Test Qualifier
0

Event Info

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

Figure 89 - The specific event details will be shown.

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



usnhqt0: USNH Test Qualifier
0

Event Info

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

Referee Score Tracking

- [Red Alliance Score Tracking](#)
- [Blue Alliance Score Tracking](#)

Figure 90 - 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.

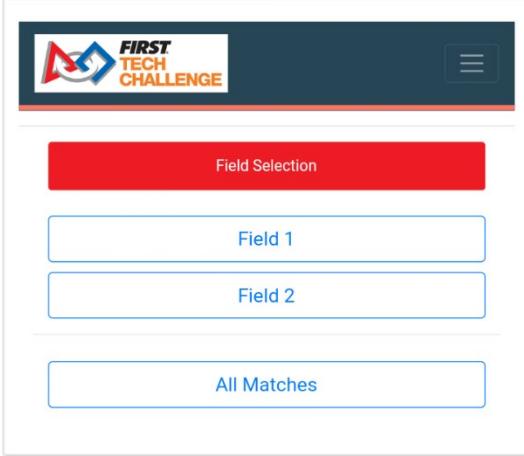


Figure 91 - Select a field if you want to bind tablet to a specific field, or select "All Matches" to score all matches with this tablet.

- 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.

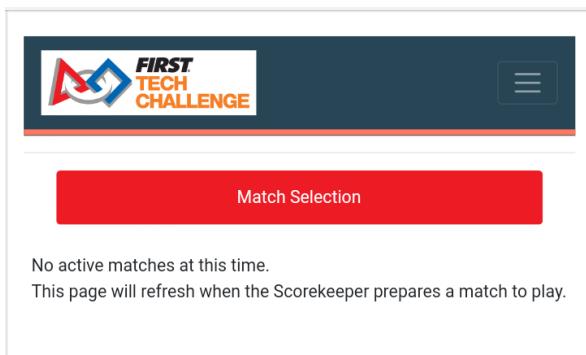


Figure 92 - If there are no active matches, then this message will appear.

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 FTC Live 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.

1. 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.
2. The scorekeeper tablets should display the match (or matches) that are available for scoring. Both referees (Red Alliance and Blue Alliance score referees) should select match that they will be scoring.

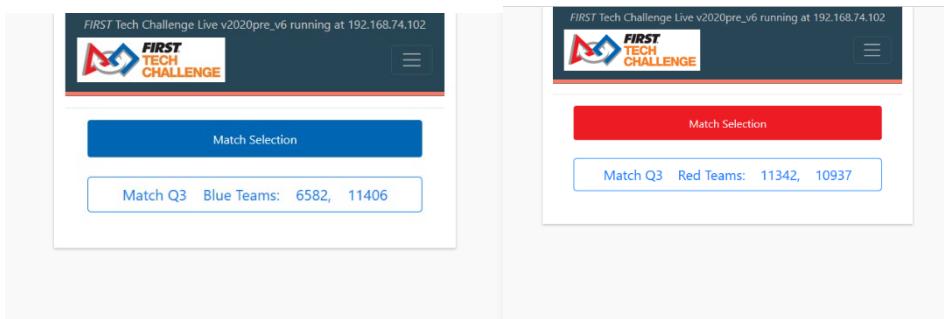


Figure 93 – The red and blue alliance referees should select the match they will scoring..

- 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.

Qualification 3		Match Preview
Team #	Nickname	Rank
11342	Ramstein HS - #2 - TEAM ROBOTTO	NP
10937	Stuttgart HS	NP
6582	Kaiserslautern HS - Raider Robotics	NP
11406	Stuttgart HS Panthers	NP

Figure 94 - 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.
 - FTC Live 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 7135 is present. Team 8089 is present.

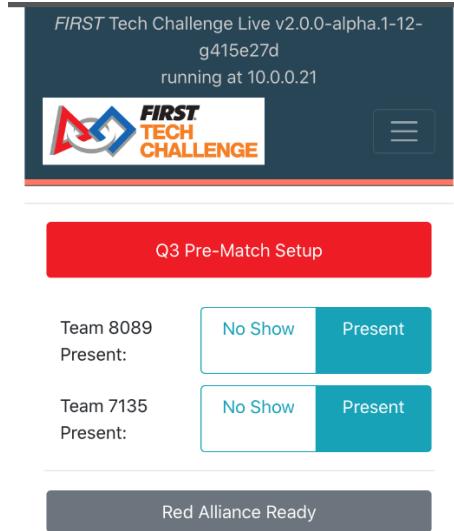


Figure 95 – Each referee should update the Pre-Match state information and then press the “Alliance Ready” button.

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

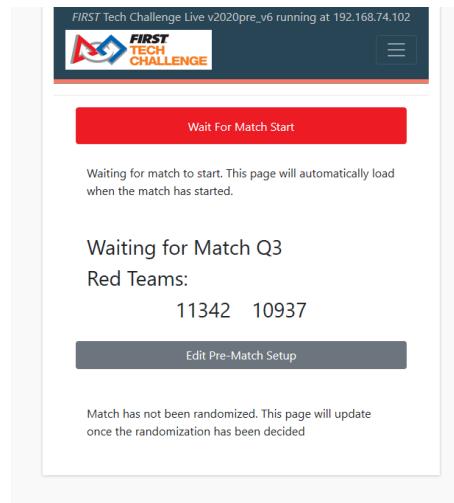


Figure 96 - Referee tablets will indicate that they are waiting for the match to start.

- 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 until “Show Random” is selected. Instead, the Match Preview information should still be visible.

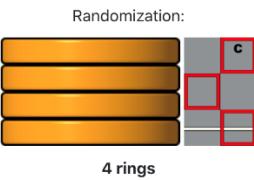
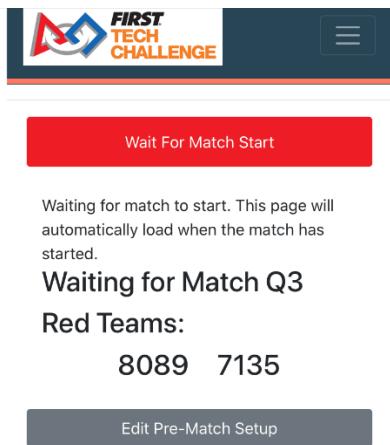


Figure 97 - Score tracking tablets will show randomization, but will still be waiting for match to start.

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

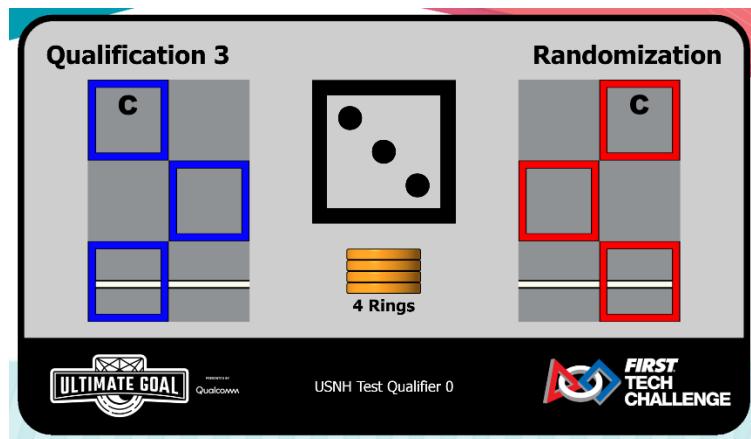


Figure 98 – After the “Show Random” button has been pressed, the Audience Display will show randomization info.

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

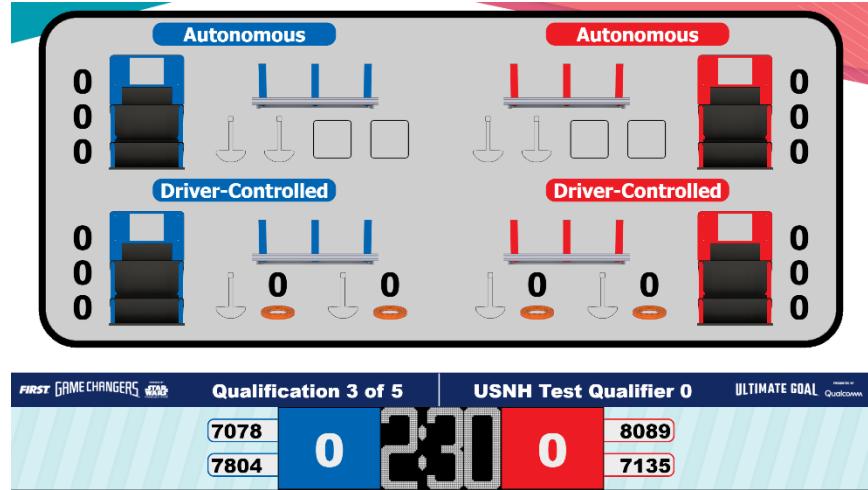


Figure 99 - The Audience and Field Displays should display the match information (Audience Display shown).

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



Figure 100 - 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 101 - 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 FTC Live.

Q3 Autonomous

Wobble 1:	None	Delivered C	
Wobble 2:	None	Delivered C	
High Goal:	<input type="button" value="-"/>	0	<input type="button" value="+"/>
RED Mid Goal:	<input type="button" value="-"/>	0	<input type="button" value="+"/>
Low Goal:	<input type="button" value="-"/>	0	<input type="button" value="+"/>
Left Power Shot:	Forward	Back	
Center Power Shot:	Forward	Back	
Right Power Shot:	Forward	Back	
Robot 1 Navigated (7078):	No	Yes	
Robot 2 Navigated (7804):	No	Yes	
Minor Penalties:	<input type="button" value="-"/>	0	<input type="button" value="+"/>

Figure 102 – 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.

Q3 Driver-Controlled

High Goal:	4		
RED Mid Goal:	0		
Low Goal:	1		
Left Power Shot:	Forward	Back	
Center Power Shot:	Forward	Back	
Right Power Shot:	Forward	Back	
Wobble 1 Rings:	0		
Wobble 2 Rings:	0		
Wobble Goal 1:	None	Start Line	Drop Zone
Wobble Goal 2:	None	Start Line	Drop Zone
Minor	<input type="range" value="0"/>		

Figure 103 - 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.

Q3 Referee Review

Submit Final Scores

Autonomous Scores

Wobble 1:	None	Delivered C	
Wobble 2:	None	Delivered C	
High Goal:	-	2	+
RED Mid Goal:	-	0	+
Low Goal:	-	0	+
Left Power Shot:	Forward	Back	
Center Power Shot:	Forward	Back	
Right Power Shot:	Forward	Back	
Robot 1 Navigated (7078):	No	Yes	

Figure 104 - 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 105 - 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.

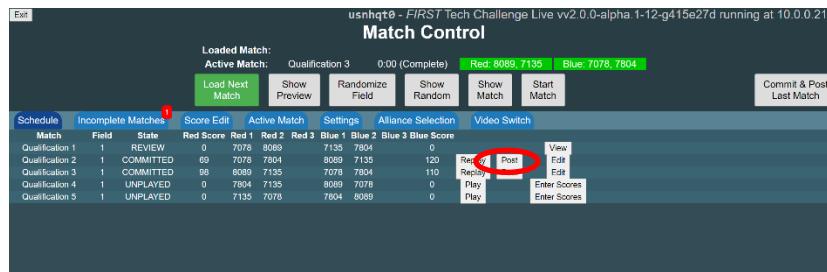


Figure 106 - Once the scores have been committed, the scorekeeper can post the results.

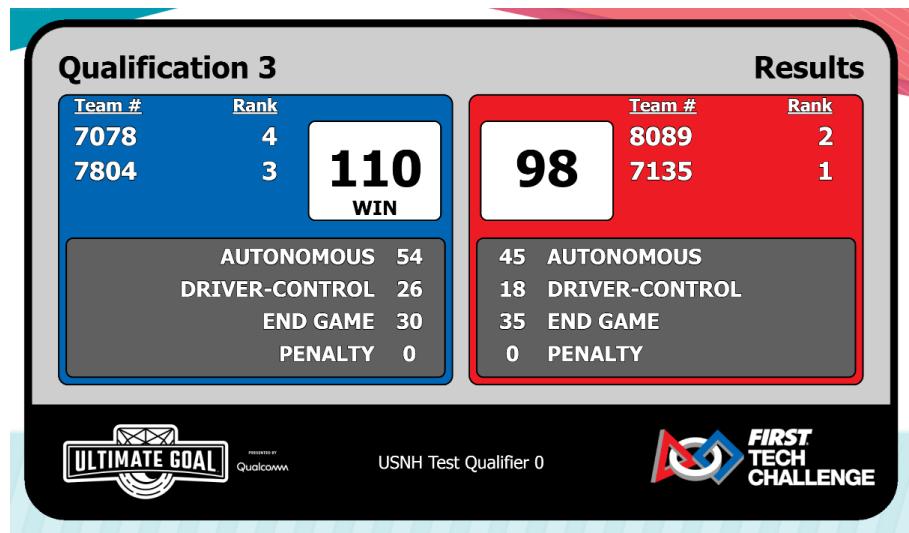


Figure 107 - When the scorekeeper posts the results, the final match info is displayed on the Audience Displays.

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.

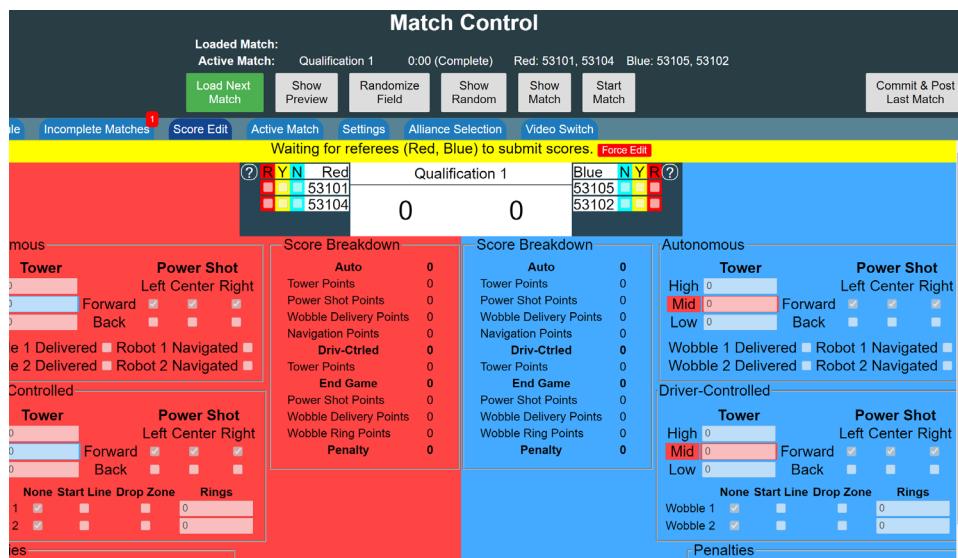


Figure 108 – Scorekeepers can edit/override the score data by selecting the Force Edit button.

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

- f. FTC Live 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.

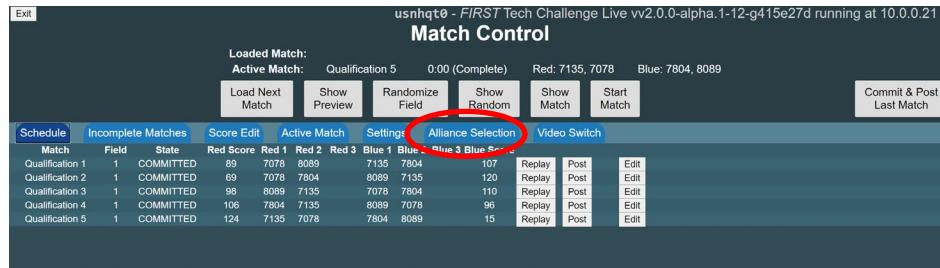


Figure 109 - Press the Alliance Selection tab to begin the selection process.

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



Figure 110 – 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.

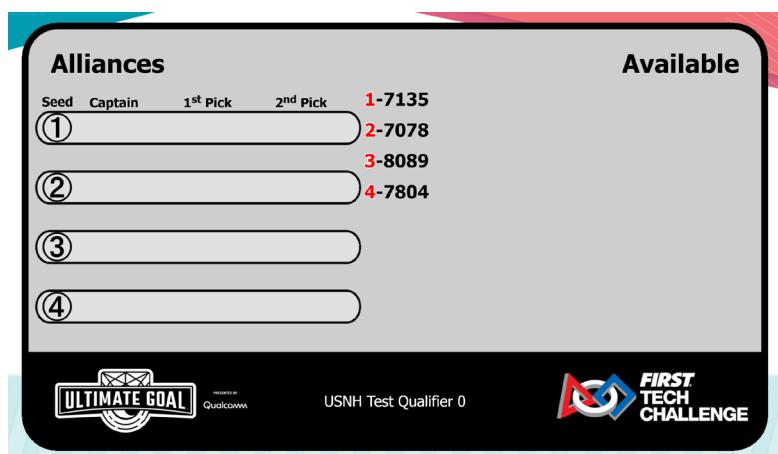


Figure 111 – Pressing the “Set Audience Display” button puts the Audience Displays into Alliance Selection Mode.

4. 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.

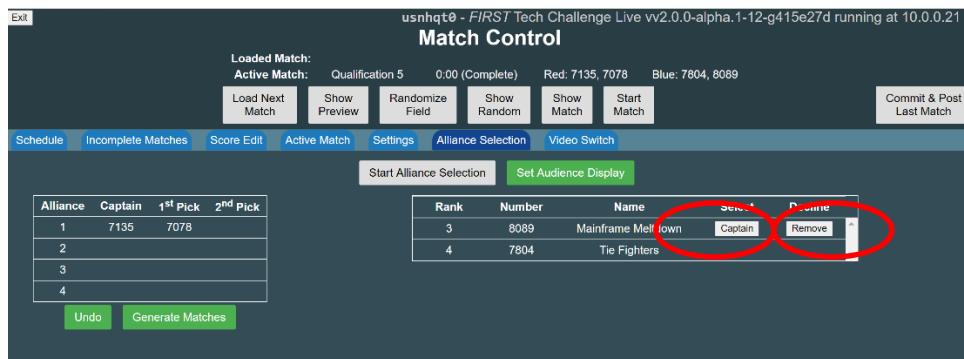


Figure 112 - Press “Captain” to designate a team as an alliance captain or press “Remove” if they are unable to be a captain.

5. 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.

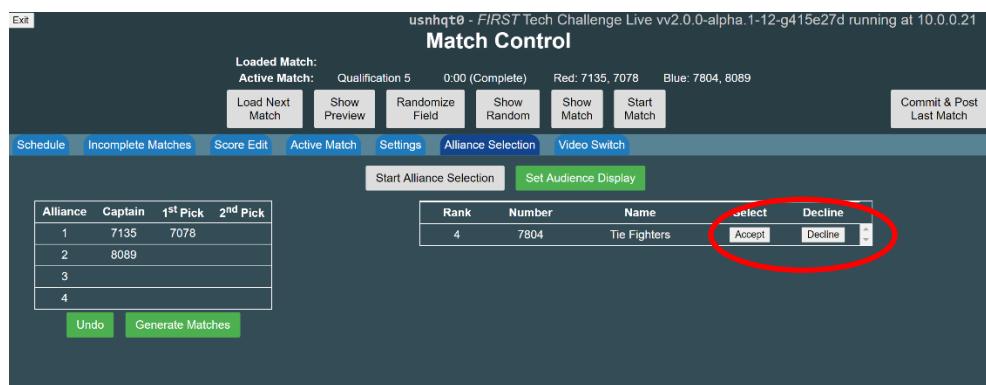


Figure 113 – The scorekeeper should press the “Accept” or “Decline” button listed next to a team to accept or decline an invitation.

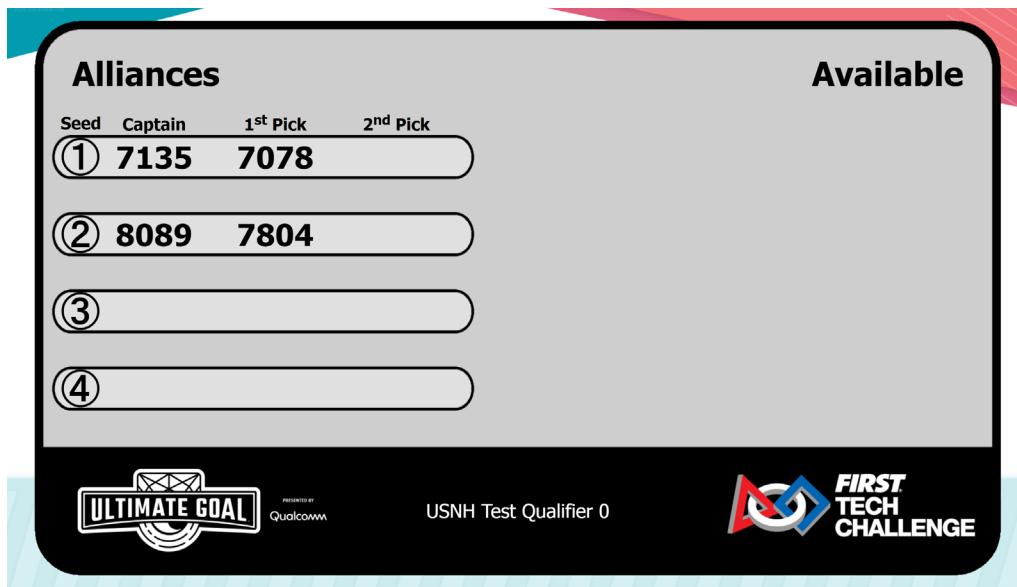


Figure 114 - As teams accept or decline alliance selection requests, the Alliance Selection Display gets updated accordingly.

- 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.

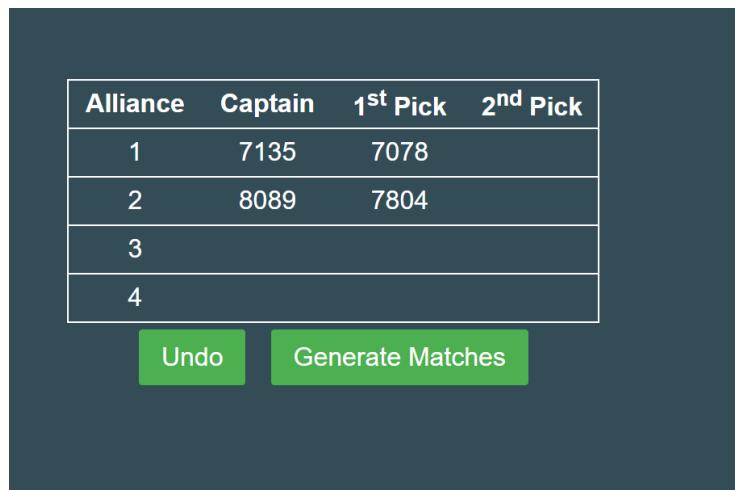


Figure 115 - Once the alliances are established, push the “Generate Matches” button to generate the elimination match schedule.

7. 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 select the “Schedule” tab to view the elimination schedule.

Match	Field	State	Red Score	Red 1	Red 2	Red 3	Blue 1	Blue 2	Blue 3	Blue Score	Play	Enter Scores
Schedule	Incomplete Matches	Score Edit	Active Match	Settings	Alliance Selection	Video Switch						
Semifinal 1 Match 1	1	UNPLAYED	0	7135	7078	0	0	0	0	0	Play	Enter Scores
Semifinal 2 Match 1	1	UNPLAYED	0	8089	7804	0	0	0	0	0	Play	Enter Scores
Semifinal 1 Match 2	1	UNPLAYED	0	7135	7078	0	0	0	0	0	Play	Enter Scores
Semifinal 2 Match 2	1	UNPLAYED	0	8089	7804	0	0	0	0	0	Play	Enter Scores

Figure 116 - Press the “Schedule” tab after the matches have been generated to view the elimination schedule.

8. 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.

Feedback Hello, wnr01_referee1

Pre-Match Setup

Team 11780 Present:	No Show	Present
Team 11780 Latched:	No	Yes
Team 8089 Present:	No Show	Present
Team 8089 Latched:	No	Yes
Team 13507 Present:	No Show	Present
Team 13507 Latched:	No	Yes

Red Alliance Ready

Figure 117 - 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”).

FTC Live 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.

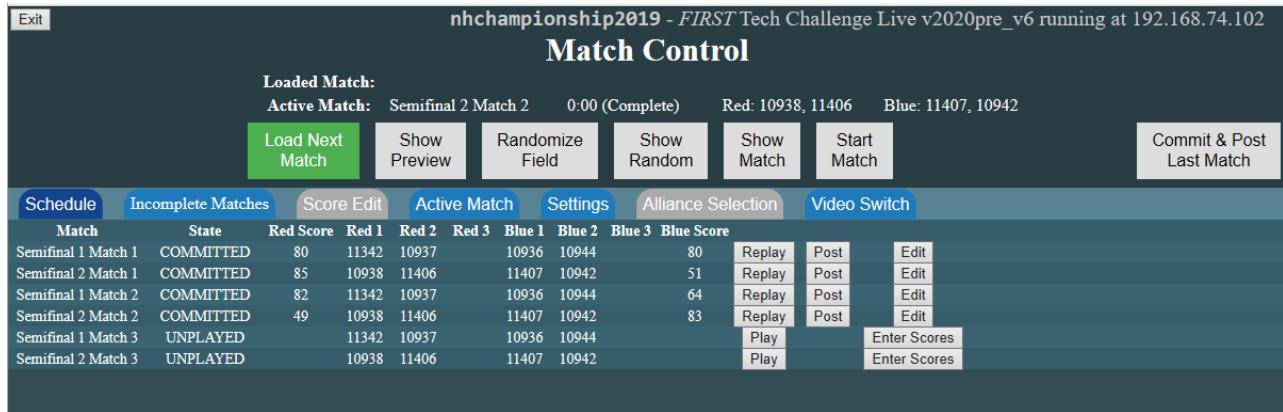


Figure 118 - The system will automatically add a match to the schedule if the alliances are tied.

When the semifinal matches are complete, FTC Live 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	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
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	Replay	Post	Edit
Semifinal 1 Match 2	COMMITTED	82	11342	10937		10936	10944		64	Replay	Post	Edit
Semifinal 2 Match 2	COMMITTED	49	10938	11406		11407	10942		83	Replay	Post	Edit
Semifinal 1 Match 3	COMMITTED	121	11342	10937		10936	10944		54	Replay	Post	Edit
Semifinal 2 Match 3	COMMITTED	115	10938	11406		11407	10942		41	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 119 – FTC Live 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.

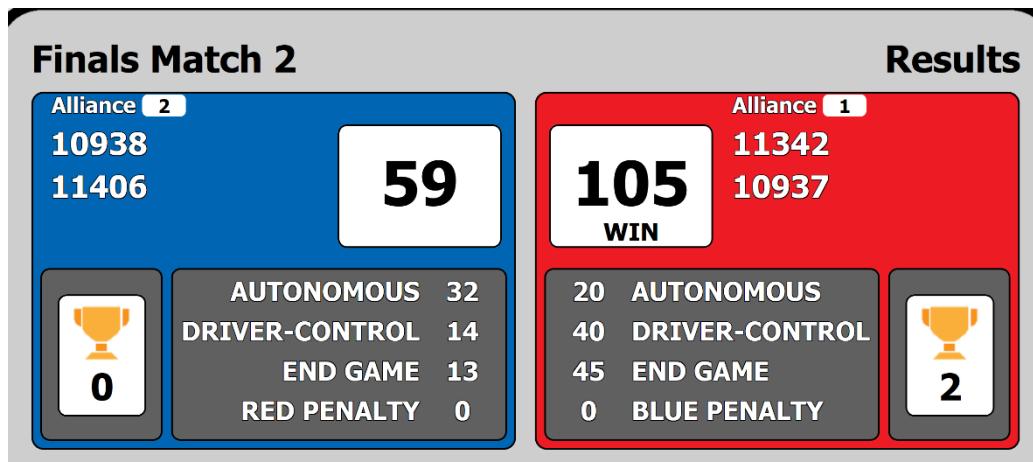


Figure 120 - Once final matches are complete, the scorekeeper can post the final match results and display the winning alliance.

15. Managing League Events

Overview of Leagues

League - A group/association of teams in a specific geographic location. This group of teams competes in meets, and then a league tournament. Each league tournament is associated with exactly one league. All teams that compete at a league tournament must be members of one (parent) league.

Child League - An optional subset of a league (the “parent” league) that compete together before joining the rest of the parent league’s teams at the league tournament. All teams in a child league are also members of the parent league. This structure exists for regions that run large league tournaments and wish to divide teams up to help organize meets.

League Meet - 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, awards or elimination matches). Results carry forward to future meets and the league tournament.

League Tournament - The final event in league play. Each league tournament is associated with exactly one (parent) league. Team rankings incorporate performance in matches from league meets. League tournaments include judging and awards. Teams advance from a league tournament to a super qualifier or regional championship.

League Configurations

In previous seasons, leagues have been managed in different regions using different terminologies. Data has been centralized into FTC Scoring system so the terminology has been standardized. Below are examples of how to transition from prior systems into the FTC Scoring system league set up. In all cases, the outcome is functionally equivalent to the prior season experience.

Standalone League Model

Regions that run single-league events and league tournaments with no inter-league play. Follow the steps in the section: [Creating Leagues for Your Region](#).

Inter-League Model

Regions that ran leagues where multiple leagues may have been present at a single event, for example, inter-league tournaments (ILTs) or other inter-league play.

This model follows the standalone league model until the league tournament, where multiple leagues play in the same league tournament. In this model, the leagues are usually isolated until the ILT, but some variants may exist where teams play in meets with teams from other leagues.

To enter this format into the system, first create a league (parent) that includes all teams that will play at a single ILT. Then, you can create a child-league to split the teams into the same groupings as you would have previously.

Example Scenario:

In the SKYSTONE season, league A and league B each had 20 teams. The two leagues played separate meets, but played together at a 40 team ILT.

Scoring System: Create one league with all 40 teams. Then, create a Child League A and a Child League B. Add the appropriate teams to each child league. All of the child league meets can be associated with their respective child league, but the ILT must be associated with the parent league.

Metro League Model

In this model, league inter-play is very common. Teams may play in any meet, and data is aggregated from the various meets at the League Tournament. Teams or events may be grouped into multiple leagues, but can play in any meets.

To enter this format, create one league and add all teams participating and all the meets. You may create child-leagues if desired. Ensure that no team plays in a meet associated with a different league. It is OK if they play with a different child league, but not a different parent league.

15.1. Creating Leagues for Your Region

Important Note: League creation and setup MUST be done in the cloud-based FTC Scoring system. It CANNOT be done in FTC Live. Similarly, the association of an event to a league MUST be done in the FTC Scoring system.

1. Log in to the FTC Scoring system with your FIRST dashboard login.
2. Select your region. This takes you to the main Region page with a list of options: Events, Teams, Leagues, Sponsors and Users. To set up a league go to Leagues, then Create League.

Name	Location	Child Leagues
No data available in table		

Figure 121 - Create your leagues.

3. Specify a unique League Code, following the same rules as event codes (all lowercase letters and numbers and underscores, no whitespace, preferably one word).
4. Specify the League Name and the Location (region)
5. Select "Create League."

The screenshot shows a web-based application for creating a league. At the top, there's a navigation bar with the FIRST Tech Challenge logo, 'Resources', 'Help/Feedback', and a greeting 'Hello, Elizabeth K McClurg'. Below the header, there's a form titled 'League Code:' with a text input field containing 'Code'. Next is a 'League Name:' field with 'Name' in it. Then is a 'Location:' field with 'Location' in it. At the bottom of the form is a blue 'Create League' button.

Figure 122 – Specify League Code, Name and Location and press “Create League”.

6. For your newly created league, you will need to return to the main region page (go back or select the FTC logo), then select “Events” to access the individual league events to add/edit teams.

The screenshot shows the main region page for a league named '[Code] Name League'. The 'Events' tab is active. The page includes a sidebar with links for 'Edit League', 'Events' (selected), 'Teams', 'Rankings', 'Leagues', and 'Users'. The main content area displays a table with columns 'Name', 'City', and 'Date'. A message 'No data available in table' is shown. At the bottom, there are links for 'Previous' and 'Next'. The page is powered by AWS and has a copyright notice for 2021 FIRST.

Figure 123 - Select "Events" on main region page.

7. Select the event to edit.

The screenshot shows the event selection screen for the 'USNH' region. The 'Events' tab is active. The main content area displays a table with columns 'Name', 'Type', 'City', and 'Date'. The table contains three rows of data: 'USNH Test Scrimmage 0' (Scrimmage, USNH test City 0, Sep 13, 2020), 'USNH Test League Meet 0' (League Meet, USNH test City 7, Sep 15, 2020), and 'USNH Test League Meet 1' (League Meet, USNH test City 7, Sep 17, 2020). The page also includes a sidebar with links for 'Teams', 'Leagues', 'Sponsors', and 'Users'.

Figure 124 - Select the event.

8. Then select “Manage Event” to add or edit teams for the league event.

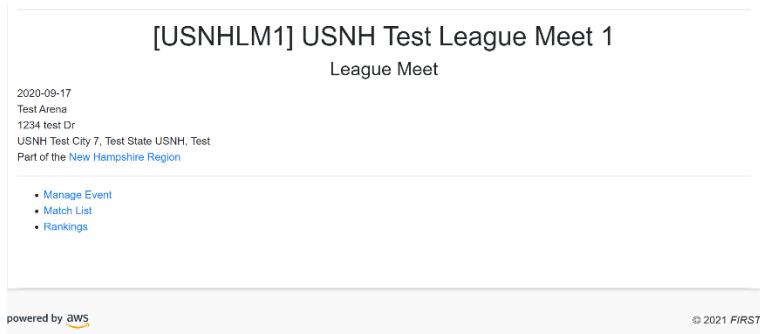


Figure 125 - Select the "Manage Event" to add/edit teams.

9. Select the "Add/Edit Teams" button.

Step	Action	Status
1	Event Users	Optional
2	Event Configuration	Incomplete
3	Add/Edit Teams	0 Teams added
4	Add/Edit Event Sponsors	0 Sponsors added
6	Play Event Locally	Optional
7	Publish Event Results	Incomplete

- a. You can add/edit teams with four different options: Find by State/Province, From Region, League Members, Add Individually.

Find by State/Province	From Region	League Members	Add Individually	Done	
Number	Short Name	City	State/Province	Country	Rookie Year
11780	B.L.U.E Box	Windham	NH	USA	2016
14590	Prometheus	Hopkinton	NH	USA	2018
15772	Brady Goats	Concord	NH	USA	2018
16169	Banana Box	Windham	NH	USA	2018

Showing 1 to 4 of 4 entries

Figure 126 - Choose from four options to add teams.

10. Selected teams will appear in purple, when finished, click "Done".
 - a. Select "Back" in the top-left corner to return to the selected league event dashboard.
 - b. Repeat steps for each additional league for your region.

Create a Child League

1. To create child leagues, you will first need to create the parent league. Then select the “Leagues” tab and the “Create Child League” appears.

[test] Test League

TestNH
Part of the [New Hampshire Region](#)

Name	Location
No data available in table	

Showing 0 to 0 of 0 entries

[Edit League](#) [Events](#) [Teams](#) [Rankings](#) [Leagues](#) [Users](#)

Search: [Create Child League](#)

2. Enter the “League Code”, “League Name” and the “Location” and save the edits.

<< Back

League Code:

League Name:

Location:

[Create League](#)

Add Teams to the Child League

3. Go to “Teams”, select “Edit Team List” to choose teams for the child league.

[child_] Child1 League

ChildNH
Part of the [New Hampshire Region](#)
Child of the [Test Parent League](#)

Number	Short Name	City	State/Province	Country	Rookie Year
No data available in table					

Showing 0 to 0 of 0 entries

[Edit League](#) [Events](#) [Teams](#) [Rankings](#) [Users](#)

Show: 50 [entries](#) Search: [Edit Team List](#)

4. Just like parent league set up, choose from 4 options to add/edit teams then select “Done”.

[<< Back](#)

Adding to league 'child_'

Child1 League

Find by State/Province	From Region	Parent League Members	Add Individually	Done		
T1 Number	T1 Short Name	T1 City	T1 State/Province	T1 Country	T1 Rookie Year	T1
No data available in table						
Showing 0 to 0 of 0 entries						

- Once you're done creating child leagues, go back to the parent league, then select "Leagues" to view the child league(s).

[test] Test League

TestNH
Part of the New Hampshire Region

Events	Name	Location	T1
Teams	Child	ChildNH	
Rankings	Child1	ChildNH	
Leagues			
Users	Showing 1 to 2 of 2 entries		

Rankings for Parent/Child Leagues

League Rankings will appear on the "Rankings" tab.

[test] Test League

TestNH
Part of the New Hampshire Region

Events	Show	100	entries	Search:														
Teams	Rank	T1	Number	T1	Name	T1	RP	T1	TBP1	T1	TBP2	T1	HS	T1	Played	T1	Counted	T1
Rankings	1		51250		Test Team 51250		--	--	--	--	--	--	--	--	--	--	--	
Leagues	Showing 1 to 1 of 1 entries																	
Users	Previous 1 Next																	

Note: As an administrator, you will see the league rankings from unpublished events, so they may differ from other sources until an event's results are published. A child league's home page will also show league Rankings, however those rankings are for fun. They have no competitive meaning at the League Tournament, and may not accurately reflect the full rankings, which are shown in the parent league's ranking list.

15.2. Running a League Event

Select "Play Locally" for the specific league event.

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.

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. This can also be found in Judging, by selecting the FIRST Tech Challenge logo.

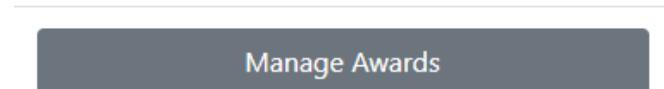


Figure 127 - Press the "Manage Awards" process to start the awards management process.

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

Award	Award Description
Judges' Award Winner: NOT GIVEN	Judges' Award This is the Judges' Award script
Compass Award Winner: NOT GIVEN	Status: Optional
Promote Award Winner: NOT GIVEN	Winner:
Control Award sponsored by Arm, Inc. Winner: NOT GIVEN	Add Row Remove Row
Motivate Award Winner: NOT GIVEN	Judge's Comments
Design Award Winner: NOT GIVEN	
Collins Aerospace Innovate Award Winner: NOT GIVEN	

Figure 128 – “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 [Judging Manual](#) rule on equitable distribution of awards. Awards that are highlighted in green have already been “given” (i.e., winners have been assigned).

16.1. Giving an Award

When you are ready to give an award to a team, select 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 “Judge’s Comments”.

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.		
Promote Award Winner: NOT GIVEN	Status Optional Winner Second Place <input style="width: 150px; height: 20px;" type="text" value="("/> <input style="width: 150px; height: 20px;" type="text" value="("/> Third Place <input style="width: 150px; height: 20px;" type="text" value="("/> Add Row Remove Row		
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			

Figure 129 - Select 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

■ Already given ■ Must be given ■ Optional

Give Awards

Award	Award Description		
Judges' Award Winner: 6582 Kaiserslautern HS - Raider Robotics	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.		
Promote Award Winner: NOT GIVEN	Status Optional Winner Second Place <input style="width: 150px; height: 20px;" type="text" value="6582 - Kaiserslautern HS - Ra"/> <input style="width: 150px; height: 20px;" type="text" value="4130 - Expected Error!!"/> Third Place <input style="width: 150px; height: 20px;" type="text" value="10937 - Stuttgart HS"/> Add Row Remove Row		
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			

Figure 130 - After assigning winners and providing justification text, press "Save" to save the award information.

16.2. Managing the List of Awards

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

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

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

The screenshot shows the 'Awards Manager' interface for the 'nhchampionship2019 - Championship' competition. At the top, there is a navigation bar with five buttons: 'Save & Exit', 'Manage Awards', 'Give Awards', 'View / Print Script', and 'Present Awards'. Below the navigation bar, the title 'Manage Awards' is displayed. On the left, there is a search bar labeled 'Enter award name' and a checkbox labeled 'Team Award'. To the right of these is a large text input field with the placeholder 'Enter award description...'. At the bottom of this section is a note: 'Presented in order listed. Drag to reorder.' Below this, there is a list of awards under the heading 'Award'. The first item in the list is 'Judges' Award', which has an 'Edit' button to its right. A detailed description of the award follows: '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 131 - You can edit optional awards. You can also reorder the awards by selecting 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 132 - 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 133 – 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.

The screenshot shows a software interface for presenting awards. At the top, there are five buttons: 'Save & Exit', 'Manage Awards', 'Give Awards', 'View / Print Script', and 'Present Awards'. The 'Present Awards' button is highlighted. Below these buttons is a title 'Present Awards' with a '▶ Present' button to its right. There are navigation buttons for 'Previous' (with an upward arrow) and 'Next' (with a downward arrow). The main content area displays four award categories: 'Judges' Award', 'Compass Award', 'Promote Award', and 'Arm, Inc. Control Award'. Each category has a 'About Award' link. Under 'Judges' Award', the winners listed are: 'Third Place' (team 10937 - Stuttgart HS), 'Second Place' (team 4130 - Expected Error!!), and 'Winner' (team 6582 - Kaiserslautern HS - Raider Robotics). Under 'Compass Award', the winners are: 'Second Place' (He Smith (10939)) and 'Winner' (She Smith (10942)). Under 'Promote Award', the winner is: 'Winner' (team 10941 - SHAPE HS). Under 'Arm, Inc. Control Award', the winner is: 'Winner' (team 10938 - Baumholder MHS).

Figure 134 – Press “Present Awards” button to begin presenting the awards.

To reveal an award, simply select the Award name and the Audience Display should display the Award name (but not the users). Selecting the 3rd place winner, will reveal the third-place winner on the Audience Display. Selecting the 2nd Place winner will reveal the second-place winner on the Audience Display. Selecting 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 select the 1st Place winner.

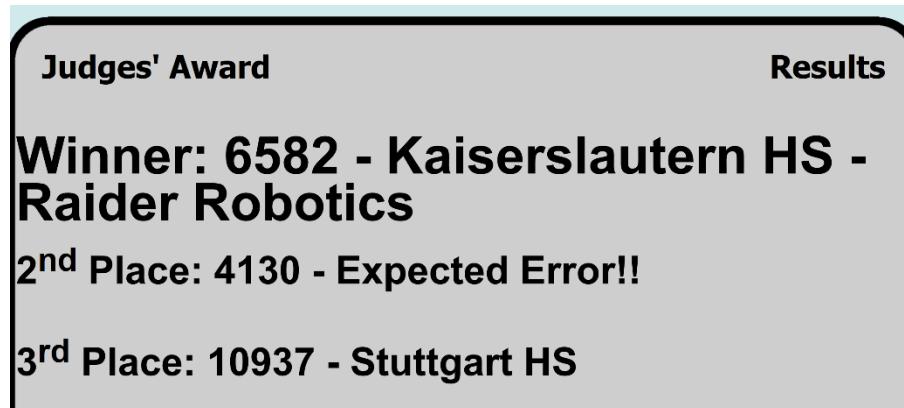


Figure 135 - As each winner is revealed, their team number and name are displayed on the Audience Display.

17. Reviewing Match Results

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

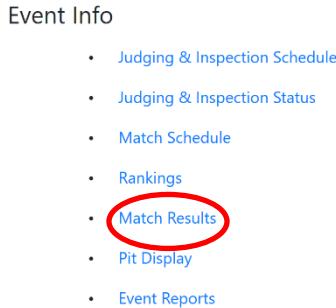


Figure 136 - Select “Match Results” link to view match results for the currently selected event.

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

The screenshot shows the Match Results page for the USNH Test Qualifier 0. At the top, there are checkboxes for "Condensed" and "Keep Background on Print". To the right is a "Download Scoresheet Archive" button and a printer icon. Below the header is a table with the following data:

Match	Result	Red	Blue	Score breakdown	History
Q1	89-107 B	7078 8089	7135 7804	Red Blue Scoresheet	View Match History
Q2	69-120 B	7078 7804	8089 7135	Red Blue Scoresheet	View Match History
Q3	98-110 B	8089 7135	7078 7804	Red Blue Scoresheet	View Match History
Q4	106-96 R	7804 7135	8089 7078	Red Blue Scoresheet	View Match History
Q5	124-15 R	7135 7078	7804 8089	Red Blue Scoresheet	View Match History

Figure 137 - You can view and print the match results.

You can also review the virtual scoresheets for a match by selecting 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.

 Red Alliance		 FIRST TECH CHALLENGE		 Blue Alliance	
Match: <u>Q1</u>	Field: <u>1</u>	Match: <u>Q1</u>	Field: <u>1</u>		
Autonomous Period		Driver-Controlled Period		Autonomous Period	
Tower High	4	Tower High	1	Tower High	4
RED Tower Mid	0	RED Tower Mid	0	BLUE Tower Mid	0
BLUE Tower Mid	0	BLUE Tower Mid	2	RED Tower Mid	0
Tower Low	0	Tower Low	0	Tower Low	3
End Game Period					
Power Shot		Power Shot		Power Shot	
Left	CenterRight	Left	CenterRight	Left	CenterRight
Forward/	<input type="checkbox"/>	✓	Forward/	✓	✓
Back	<input type="checkbox"/>	✓	Back	<input type="checkbox"/>	<input type="checkbox"/>
			None Start Drop Line Zone Rings		
Wobble #1 Delivered	<input type="checkbox"/>	Robot #1 Navigated	<input type="checkbox"/>	Wobble #1 Delivered	<input type="checkbox"/>
Wobble #2 Delivered	<input type="checkbox"/>	Robot #2 Navigated	<input type="checkbox"/>	Robot #2 Delivered	<input type="checkbox"/>
Penalties					
# Minor	0	# Major	0	# Minor	0
Penalties					
# Major	0				

Figure 138 - You can review the combined or individual scoresheets for a match.

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

<< Back to Match Results

usnhqto History for Q1

Most Recent First

Record #	Type	Time	Winner	Red Score	Blue Score	Scoresheet
2	Commit	2020-09-29 12:42:53 PM	Blue	89	107	Scoresheet
1	Scorekeeper Edit	2020-09-29 12:42:53 PM	Blue	89	107	Scoresheet

Figure 139 - You can view how many times a match's scores were revised and re-committed.

18. Troubleshooting the FTC Live

18.1. Accessing the FTC Live Logs

It can be helpful to access the FTC Live 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 select the “bin” subdirectory to view its contents.

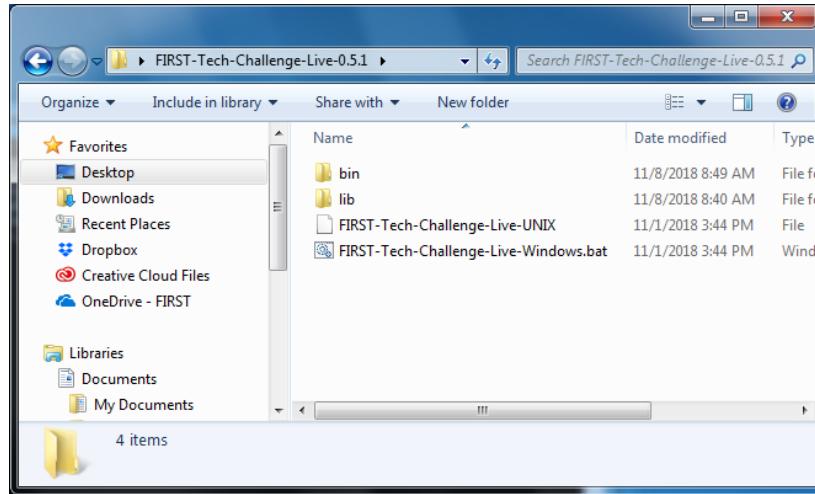


Figure 140 - Open the bin subdirectory.

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

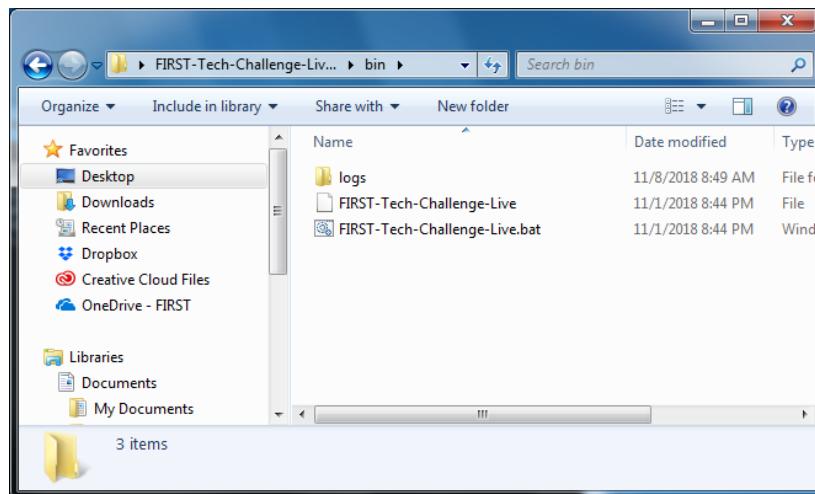


Figure 141 - Double select the "logs" subdirectory.

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 a log file to view its contents.

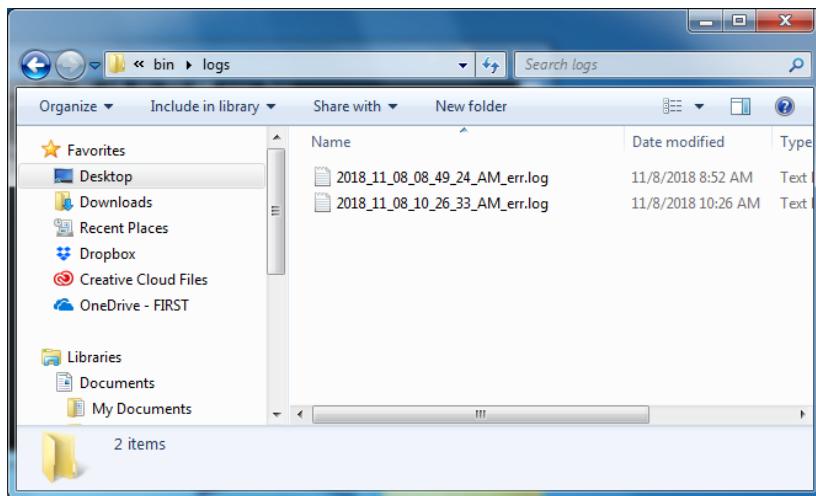


Figure 142 - You should see a listing of log files within the "logs" directory.

```

[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 143 - Log files contain useful information for troubleshooting.

19. Appendix A – Resources

Game Forum Q&A

<https://FIRST Tech Challengeforum.firstinspires.org/>

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/FIRST Tech Challenge/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 FTC Live 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 about this manual, please email Firsttechchallenge@firstinspires.org. Thank you!