

Smart Video Replay

Game Day Preparation & Troubleshooting Guide

Game Day Preparation

- Make sure your batteries are charged.
- Make sure you have enough batteries for the entire game.
- Make sure all your equipment is in good working order.
- Make sure your camera(s) have internal storage / memory card to store video on them.
- Make sure your camera(s) internal storage is formatted and has space for the game video. *Remember, if your computer fails, you wireless fails, your router falls out the press box window, etc., you always have your "video" on the cameras.*
- *You can never have too many data and video cables as backup.*
- *You can never have too many extension cords.*
- *Spare parts are good things.*
- *Do not do anything different or try anything new on game day unless you have tested it out beforehand.*
- Make sure your coaches know that you are using technology (computers, router, software, etc.) to get video of each play to them immediately after it occurs. Make sure they understand that if the technology fails, they may lose this ability on the sideline. HOWEVER, make sure they understand that you DO HAVE a backup plan – video is also recorded to the storage in the camera(s) so if the gremlins show up, continue on with the game and video will be provided after – just like always.
- Try and get some "IT smart" help so you can handle things in multiple places without having to run from the end zone to the sideline to the press box troubleshooting.
- Show up early to the game, set up, test the video recording, test all the tablets.
- Be ready for rain or other weather... have a plan to secure your equipment.
- Remember, your priorities are, in order:
 - 1) Make sure you record the game on video to the cameras (backup). *Remember, your disaster plan motto is "At least we will have video."*
 - 2) Provide video replay to the coaches on the sideline.
 - 3) Provide video replay to the coaches in the box.
- Have good camera operators and a server operator. You did not set this system up to have the coaches become unhappy with the video (too wide, too narrow, etc.) or improper data with each play (down/distance).
- Your server operator should know how to turn on the computer and start the software.
- Be ready for anything. Stay calm. If something goes wrong, do not panic, troubleshoot.
 - We have run replay for quite some time and just when it seems like we have seen everything, we get a new challenge.
 - Fire in an electrical box.
 - Someone kicked the cord on the sideline TV right when the Head Coach touched the screen... "WHAT JUST HAPPENED?"

- At game near an AF base, all wireless went out “where they testing communications jamming???”
 - Rain, Rain, Rain
 - Wireless Distance was very far... (see guide below).
 - Thick glass in the press box and windows did not open.
 - No Power..
 - No place to setup (we setup in the home stands).
 - Coaches that would not let us run end zone video.
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- Remember, you will be challenged. Be prepared to be without replay if the problem cannot be solved but NEVER EVER have to tell a coach “we do not have game video.” RECORD VIDEO ON YOUR CAMERAS – that is your emergency chute.
- Make sure your team knows how to put the equipment away without destroying it... we have had antennas broken off routers, critical devices (end zone transmitter) dropped on concrete, computers and tablets stored in cases without being turned off (meltdown!!!), etc., and the next game we got a great surprise when the equipment was broken.
- Your first game should not be your first replay test... while the games will be hectic at times, you will get good at this and your team will too! We said this before, but have a plan that includes disaster preparation and go with it... do not panic do not panic do not panic... unless you forgot to have your camera operators record video to the camera as your backup or the forgot to... yeah, that has happened too.

Troubleshooting Tips

This guide will provide you a punch list for trouble shooting your system should you encounter certain problems running SVR. While we will respond to Support@SmartVideoReplay.com, we simply cannot be your IT “networking and computer expert” that performs basic networking tasks for you. We expect your organization to read our manuals and guides and to be familiar with the system. Also, you must supply that IT person for your own organization. The successful replay systems are run by IT experts. Reach out to your QB Club, your parents, your faculty – there is an IT expert out there that needs to join the football staff and let the coaches view video and not worry how it got there but know that it will always be there. Remember, this system is designed for a novice computer user to watch video but we expect the person who “administrates” and “configures” the system to have a working knowledge of windows, computers and wireless routers. If you are not this person, then find someone who can help you. The system works great but requires a knowledgeable person to set it up, maintain and operate – but anyone can view the video. Also, remember that with any computer system, hardware failure is not unheard of... so when you encounter issues, remember to approach the problem methodically so you can isolate and solve for the failure – whether it be your software configuration or your hardware.

BEST TIP EVER: Do not attempt to “throw the system together” an hour before game time. Give yourself some time. Become familiar with the system in practices, scrimmages and even spring games or 7 on 7 games. Be prepared, be ready and know your system before they turn on the Friday Night Lights.... For instance, recently we were at an away game and we took our router out of the case and an antenna was broken. We had to improvise quickly to make sure we could get things running. Fortunately, we were onsite 3 hours prior to game time and were able to get things fixed in plenty of time.

SECOND BEST TIP EVER: Get handheld radios for your video crew so they can communicate with each other.

Router Tips:

- Never turn on your router without the antennas connected. Never turn on any device with an external antenna without first connecting the antenna... otherwise the transmission signal will radiate internally within the device and fry it up..
- Never leave any computer or router or tablet in a hot area or in direct sunlight.

The Client cannot Auto Discover the Server

- Make sure SVR Server software is running.
- Make sure the SVR Server computer is plugged into the wireless router (do not plug into the WAN port, use ports 1, 2, 3, 4
- Make sure the SVR Server computer has both PUBLIC and PRIVATE firewalls disabled. If you do not know how to do this, get help OR you can simply Google your version of Windows.
- Make sure your SVR client is actually connected to the wireless network.
- Make sure the Windows User Name & Password is setup on the server (this is how the clients authenticate to the server).

The X264 configuration will not save my settings.

- This is a “rights” issue to save to your Windows Registry. Run the configuration application as the Administrator. To do this, right click on the icon, select “Run as Administrator”.

My recorded video does not look good and/or is dropping frames and/or seems to stutter.

This can be due to several issues... either one of them or a combination.

- The most common problem is the encoder is not configured correctly, so make sure the X264 video encoder is configured correctly. See our server guide. Remember to run the configuration as an Administrator so the settings save (see above).
- Your cameras are not set to 1080p HDMI output.
- Your SVR Server is not configured correctly (video size 1280x720, the correct encoder, etc.) so make sure you are checking our manual for the best settings (see our hardware guide, it takes horsepower to run two video feeds).
- Your SVR Server computer is below our minimum specs.
- Your SVR Server computer has issues – a knowledgeable person must configure this system.
- Your video capture devices need a firmware update, are faulty or otherwise not working properly.
- Your server hard drive is underperforming. Consider an SSD. Configure the SSD for performance.
- Your SVR Server has “power saving” options enabled that throttle back the processor or power, put the hard drive to sleep, etc. Make sure you review all your advance power management plan settings on your computer and set them to no sleep, max power... specifically the screen, the processor, the hard drives and the USB ports.

My video seems to stutter/pause when recording and it plays back fast on Windows and on HUDL...

- Right click on the “Configure x264VFW” program, choose “Run as Administrator.” Change the settings to the following. If you lower the “Average Bit Rate”, the video size is smaller and the

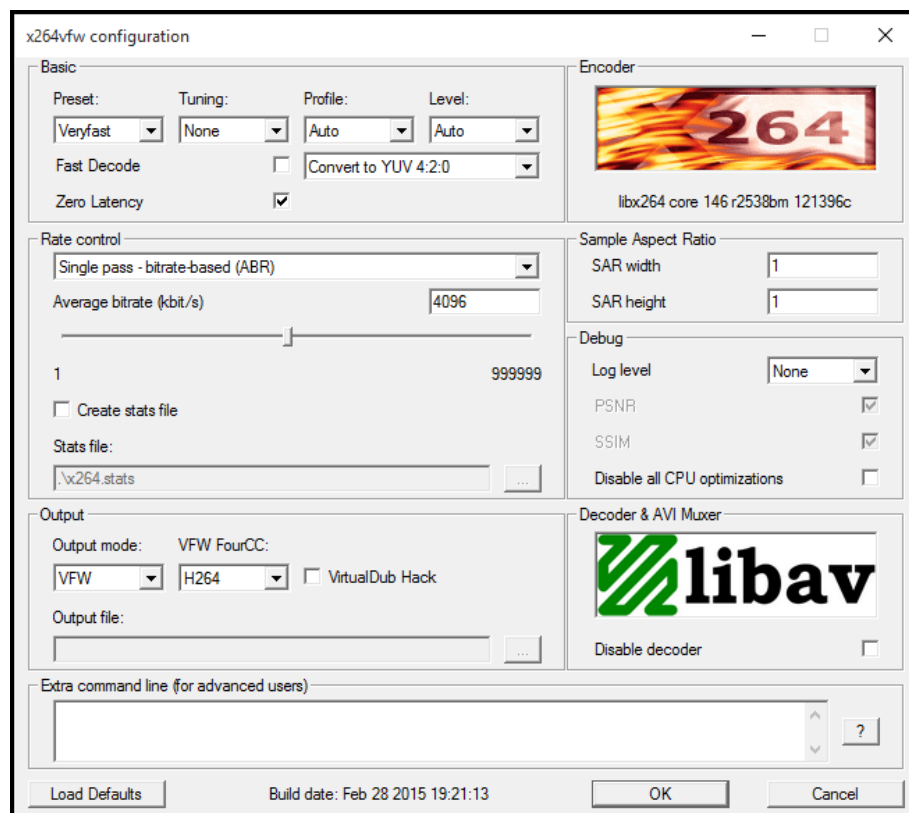


image is not as crisp but still very good. If you raise it, the video size is larger and the image is crisper. We recommend anywhere from 4096 (4 MegaBit) to 8192 (8 MegaBit).

My router runs slow sometimes.

- You may have too many devices connected. If you have the Tri-Band router, consider configuring it with 3 separate SSIDs (instead of one using all bands) and then connect your clients to these separate IDs. If you do not know how to do this, you must find someone that can perform this task. This allows you to connect devices on separate bands so they do not compete with each other.
- You may need to turn off the “Local Synch” option on your SVR clients... this can slam the router if too many have this option. Instead, simply start it at the beginning of half-time and at the end of the game only to get your video when the wireless is not needed for the game... however, if you have a device on its own band, this should not be an issue).
- You may be out of range of the router (see our topic below on Router Range below).
- You may not be using the router correctly. Check our Router Guide for instructions on how to position your router for maximum range.
- Make sure the router “firewall” is off.
- Consider hiding your SSID from other users.
- Consider using the MAC address filter to only allow authorized devices to connect.
- Consider the Ubiquiti Nanobeam AC point to point wireless bridge. Customers who use these devices report that in crowded stadiums with long distances to the sideline, the wireless performs flawlessly. See our Ubiquiti Nanobeam AC Wireless Bridge guide to learn how to setup one of these system. They are low cost (less than \$300 and very powerful).

My older iPads are slow.

- Yes, they have older communication equipment. The fastest wireless (at this time) is 802.11ac.

The iPad cannot communicate with the Server

- Make sure SVR Server software is running. The SVR Server software is required to be running for all iPad functions to connect and to view video. See the Client Cannot Auto Discover the Server for additional troubleshooting steps.

My router range is not that great... how can I extend it?

- See the above topic about “slow routers” above.
- If you are very far away from your router, have obstructions between you and the router (fences, players, popup tents, etc.) can be a problem. Make sure you have a clear line of sight.
- Consider getting “more powerful, directional antennas” for your router. For the ASUS router, you can but the ASUS panel antennas (ASUS Part Number: WL-ANT157). <http://www.asus.com/us/Networking/WLAN157/> Remember to aim the side that has the “ASUS” logo at your target area – that is the business side of the device.
- If you are running a windows device as the client and you have a USB port, consider getting an external wireless adapter for this device. The one we use sometimes is the ASUS (USB-AC56). Many times this device is the difference between no router connection and very good router connections. This allows us to mount the antenna about 10’ in the air (we put it on top of a 5’ pipe that is on top of our sideline TV mount) and extent the USB down to our surface

device. <http://www.asus.com/us/Networking/USBAC56/> If you use this option, remember to disable your internal wifi so only one wifi device is communicating.

- For a great article on the differences between wireless networking at 2.4ghz and 5ghz, go here: <http://www.tp-link.com/sa/faq-499.html>

I have a Paralinx Triton on my EndZone camera, and it loses connection or cannot connect.

We use a Triton every week and we have had great success with the hardware product. However, they require tweaking in each different environment. Here are the steps we take when we cannot connect.

- Make sure there are no obstructions to the line of sight between the transmitter and the receiver.
- Make sure your battery level is not low.
- Power off the transmitter and receiver.
- Verify your camera is putting out 1080p HDMI (in the camera settings)
- Connect the video to the transmitter.
- Power on both devices (that usually does the trick).
- Turn off your wireless router for a few seconds, then turn it back on. Your wireless router is most likely set for "auto channel selection" and if it sees the Triton on a specific channel, it will disregard that channel. If you turn it on before the Triton is on, it may select the Triton channel.
- Try changing channels. *We were recently onsite at a school and their favorite channel (2) did not work at all. They had a very smart IT guy and he said knew that wireless routers at their school were on the same band (in the low range) and so he moved to a higher channel (7) and it worked perfectly.*

If this does not work, then time to get more detailed in the troubleshooting.

- Move the camera closer... see if it connects. Then move it back to where you want it...

If this does not work, then time to get more detailed in the troubleshooting.

- Move the transmitter about 5 feet from the receiver.
- Repeat the above steps.
- Replace the cables (HDMI) you are using.
- Try plugging the camera directly into the capture device (USB), bypassing the Triton altogether. Did you see video on the server? If not, the problem is not the Triton. If you did see video, they Triton may have issues.

If this does not work, then time to get Paralinx involved. Go to the Paralinx website and follow their troubleshooting steps. They also have a support staff that can help you.

My server screen keeps turning off... and sometimes it runs slow... and sometimes it goes to sleep.

You need to adjust your server's power settings (power plan) to not go to sleep, to not turn off the hard drives, to not turn off the screen, to not throttle back the processor, to not power save on the usb ports, etc. Basically, max power on everything. How? If you ask that, you need to get your IT tech to help you out.