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SPORTS

Technical Requirements Guide

Version 1.7

Overview

The Technical Requirements Guide contains all of the technical information needed to run the PlayOn! Sports Platform successfully. Before you attempt to produce a live event, please provide the required information to your IT department to ensure a smooth and unproblematic production experience.

1 Hardware Requirements

If using your own laptop/computer to run the PlayOn Producer software, here are the technical requirements for the software to operate on your machine:

- Operating System: Windows 7 Professional
- Processor: Intel i5 Processor at 2.4 GHz or faster
- Memory: 3GB of RAM is the minimum, but we recommend 3GB or more
- Hard Drive: 160GB or better at 7200 rpm

If you have an additional laptop and wish for us to install PlayOn Producer on it, please contact us via email at support@playonsports.com or via telephone at (877) 339-7529.

2 Internet Connectivity

The PlayOn Platform requires communication from the PlayOn Producer application to allow a user to do the following:

- Schedule and edit events
- Upload video files
- Stream live video

Given the secure nature of many networks, some firewall exclusions may be required to ensure the communication can occur as desired.

2.1 Connectivity Requirements

Please consider the following when choosing how you connect to the Internet before streaming an event:

- Use a hard-line connection for streaming events.
- Confirm that the network changes required to guarantee that you can properly stream your event live have been made.
- Due to the instability of the signal, we do not recommend streaming via Wi-Fi or cellular networks. These issues will cause an interruption in the stream that will adversely affect the viewer as well as your local and server-side recording.
- Though we do not recommend the use of Wi-Fi or cellular networks, please consider the following if you decide to stream via this type of connection:
 - For Wi-Fi networks, we recommend that you stream at a lower bit-rate even though you may have a higher upload speed. We suggest using the 600 Kbps encoder session.
 - For cellular networks, we recommend that you do NOT stream video. We recommend using a 128 Kbps encoder session and do NOT plug in the video connector to the video capture device (Elgato). This will allow you to stream **audio** and still include scoring and graphic slates.
- For on-campus venues that do not have a hard-line Internet connection, we recommend the use of a point-to-point wireless system when a hard-line connection cannot be achieved. Please contact your Account Manager for further information regarding point-to-point wireless.
- Be sure you perform the speed tests as described in the PlayOn Producer User Guide (section 3.5) to ensure that your Internet connection is adequate for streaming your event.

Internet Speed	Streaming Bitrate
Upload speed > 1.5 Mbps	640x360_846 kbps
Upload speed between 1.0 – 1.5 Mbps	640x360_696 kbps
Upload speed between 0.7 – 1.0 Mbps	640x360_496 kbps
Upload speed < 0.7 Mbps or wireless	640x360_126 kbps*

*If you must broadcast a live event at 640x360_126 kbps, stream audio only with graphics. Do not stream any video feed from your camera.

2.2 Bandwidth Requirements

The standard streaming bit rate utilized is approximately 1.2 Mbps. We recommend that you have a consistent upstream bitrate of at least 2 Mbps. You can get by with a lower bit rate than 2Mbps, but you would have to stream at a lower bit rate with our software.

2.3 Proxy Servers

Though they technically should not cause an issue, we have discovered that networks leveraging proxy servers to manage Internet connectivity access cause issues with establishing a reliable video stream. Given the many ways proxy servers can be configured to help manage Internet access, we recommend that you simply allow the computer streaming video using the PlayOn Platform to bypass the proxy server.

Many clients assign a static IP address to the computer performing the video stream and allow it unimpeded access to the Internet.

2.4 Connectivity Management & Traffic Shaping

Though rare, we have encountered networks that have automated connectivity or connection management processes in place. Systems that manage connectivity in an automated fashion can impact system's ability to stream. If your network employs a system/process that will reset Internet connections at some predefined criteria, this interruption will cause a loss in the video stream and impact the viewer and the system's ability to properly record a local or server VOD file.

You can learn more about these solutions at http://en.wikipedia.org/wiki/Traffic_shaping.

Many clients assign a static IP address to the computer performing the video stream and allow it unimpeded access to the Internet.

2.5 Firewall Exclusions

Our software makes use of video streaming via Flash Media Live Encoder and data communication via SOAP. Our system requires unimpeded TCP traffic in addition to HTTP traffic. We stream all live and on demand video via Limelight Networks. They are a tier 1 CDN provider.

For our HTTP traffic, we make use of HTTP GET, POST, PUT, DELETE, and OPTIONS request methods.

To enable proper data communications, open TCP traffic on ports 80 and 443 for the following domains:

- playonsports.com
- nfhsnetwork.com
- .playonsports.com (this includes all playonsports.com sub-domains)
- .nfhsnetwork.com (this includes all nfhsnetwork.com sub-domains)
- playon-2a8f265e53004a25b294096d5a2959ac.s3.amazonaws.com (our upload server)
- nfhsnetwork-2a8f265e53004a25b294096d5a2959ac.s3.amazonaws.com (our upload server)
- http://playon.vo.llnwd.net

To enable live streaming, open TCP traffic as described:

- playon.wmod.llnwd.net:80
- playon.fc.llnwd.net:1935
- playon.fc.llnwd.net:1935
- ingest01.pri.playon.fmspush.llnw.net
- ingest02.pri.playon.fmspush.llnw.net
- ingest03.pri.playon.fmspush.llnw.net
- ingest04.pri.playon.fmspush.llnw.net
- ingest05.pri.playon.fmspush.llnw.net
- ingest06.pri.playon.fmspush.llnw.net
- ingest07.pri.playon.fmspush.llnw.net
- ingest08.pri.playon.fmspush.llnw.net
- ingest09.pri.playon.fmspush.llnw.net
- rtmp://fmspush.sjc.llnw.net/playon
- rtmp://playon.fc.llnwd.net/playon/_definst_
- rtmp://fmspush.sea.llnw.net/playon
- rtmp://fmspush.ord.llnw.net/playon
- rtmp://fmspush.mia.llnw.net/playon
- rtmp://fmspush.lga.llnw.net/playon
- rtmp://fmspush.lax.llnw.net/playon
- rtmp://fmspush.dal.llnw.net/playon
- rtmp://fmspush.atl.llnw.net/playon
- *jwpcdn.com
- *jwpsrv.com

3 Video Format Requirements

If you desire to upload other video content to your video portal, you will need to create or transcode your video files as follows:

- Accepted File Extensions: .FLV and .MP4
- Video Codec: H.264 (main profile level)
- Video Bitrate: 750 kbps
- Video Frame Rate: 29.97 fps
- Audio Codec: mp3 or AAC
- Audio Bitrate: 96 kbps
- Audio Frequency: 41000 Hz
- Recommended Frame Size: 640 x 360

4 System Updates

To ensure that your system maintains good working order, be sure to run your Windows Updates often. On most PlayOn Sports laptops, the system is set to automatically run updates by default. However, it is in your best interest to double-check that these updates are kept current.

To do this, sign on to the laptop as username: **administrator**, password: **2080!@#\$media**. Go to Start: All Programs: Windows Updates: Custom Install: and select Review and Install all Updates. We recommend that these updates be performed on a monthly basis. Failure to update can affect the laptop's ability to properly stream your events.

5 PlayOn Software Updates

Check the Dashboard in PlayOn Manager (see section 4 in the PlayOn Manager User Guide) for the latest installer of PlayOn Producer. Our development team is constantly improving the software, so make sure to download the latest version.

6 Support

We at PlayOn are always here to help you if you have any questions or experience any issues. We have technical support on call for issues pertaining to your PlayOn Account, the PlayOn Manager software, and your events. If you have any inquiries or concerns, feel free to contact us a few ways:

- Email: support@playonsports.com
- Phone: **(877) 339-7529**
- Website: support.nfhsnetwork.com

We would be happy to help you!