



# JUST:live

**Administrators's Handbook**  
for just:live v1.7.0 and later

Last change: 2012-October-05

ToolsOnAir - Broadcast Engineering GmbH  
Zirkusgasse 39  
1020 Vienna  
AUSTRIA

VAT ID: ATU 64362718  
Phone: +43 (0) 1 236 8665  
[www.toolsonair.com](http://www.toolsonair.com)  
[sales@toolsonair.com](mailto:sales@toolsonair.com)

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# ABOUT THIS DOCUMENT

This document describes the steps you should follow to install and configure ToolsOnAir's just:live version 1.7 on Macintosh systems running Apple's OS X 10.7.4 (Lion) or 10.8 (Snow Lion). You will learn how to install and set up the required hard- and software infrastructure and how to monitor the infrastructure to ensure the just:live system continues to run effectively. After reading this document you should be able to understand how the system works and therefore be able to do the installation and maintenance of the system on your own. To successfully install and set up just:live you need to have a certain level of IT knowledge and experience.

We make these assumptions:

- You are familiar with the Macintosh environment.
- You have system administrator privileges for the network and the OS of the Macintosh systems you are working on.
- You are experienced in installing and configuring client-server software in a TCP/IP network.
- You will install the software on machines that have been connected to a LAN or WAN by a network engineer.
- You are familiar with the arrangement of the machines in the just:live system and know which machine is to be used for which purpose.
- You understand the main broadcasting concepts of the just:live system, e.g. the method which is used for broadcasting the output of the just:live system.
- You understand general video technologies like codecs, frame rates but also transmission methods and timecodes.

## 1 ABOUT JUST:LIVE

just:live is a network based, manually operated playout server with a built-in video switcher which allows switching between QuickTime movies and live feeds like studio signals. It also has the capability to easily integrate realtime graphics, including corner logos and realtime tickers linked to different data sources (like XML, RSS feeds and remote databases). The graphical user interface of just:live allows you to organize your QuickTime movies, graphic elements and router control/GPI events before bringing them on air. This document deals with all necessary steps to create and configure a playout channel.

### Goals of this document

- Installation of just:live
- Listing of possible hardware configurations
- Configuration & administration

## THE APPLICATIONS

Buying just:live means to buy the just:out engine with a certain number of layers (video and FX layers) and optional functionality like router control and streaming out. There are also two other software packages which come free of charge with your purchase: just:connect and the just:live UI (= user interface). These applications can be installed on any number of network connected machines, thus enabling you to set up multi channel environments in different ways but also to work on the same channel concurrently using several just:live UIs on different machines, depending on the user rights defined for that particular channel.



### just:out

...composes QuickTime movies and graphics as an application which runs in the background. just:out can run on multiple machines (one just:out plays the QuickTime movies and another just:out renders the graphics on top of it, for example). Several instances of just:out on different machines can also be used to setup a redundant system – enabling load distribution and fail-safe operation (using the "2N" or "N+1" redundancy).



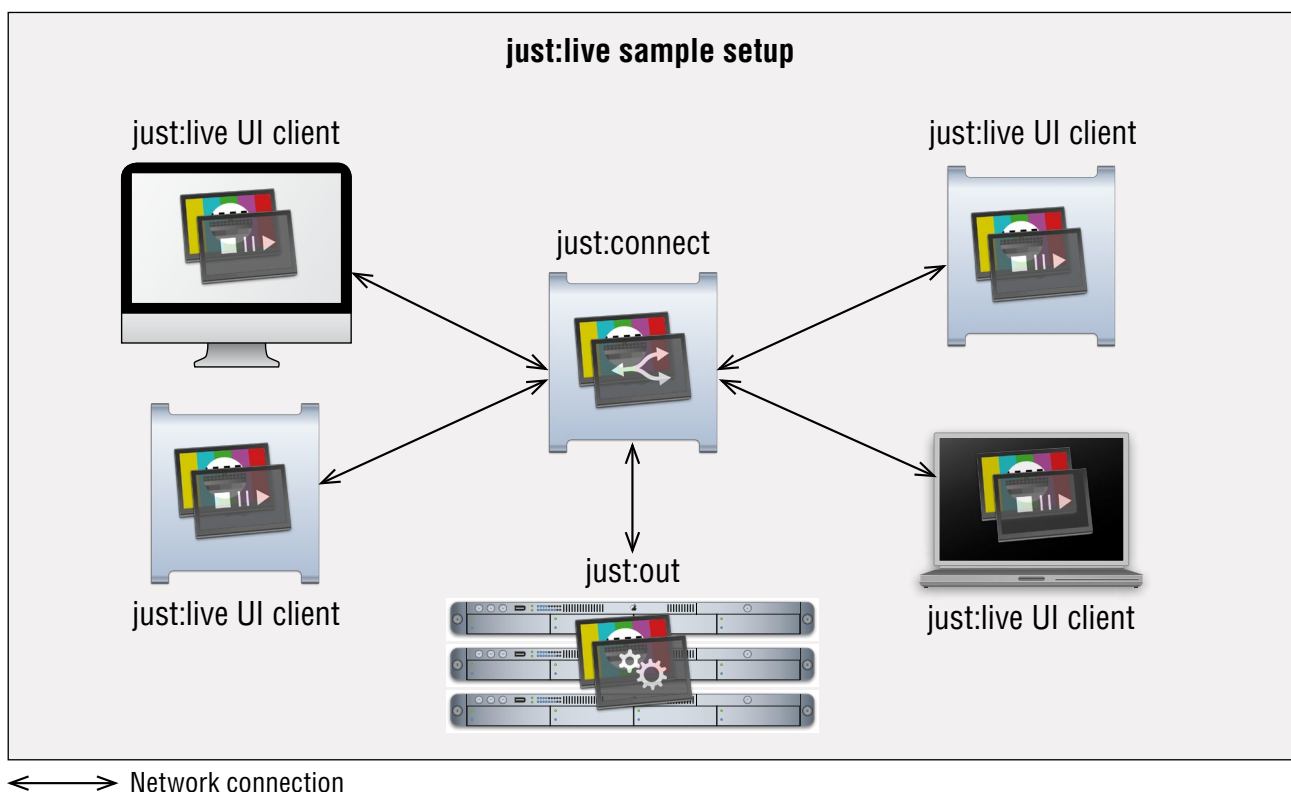
### just:connect

...is the centerpiece of the playout system. With this application you can create and configure channels, distribute rendering to engines on different machines, manage users and make use of optional security through redundancy and backup.



### just:live

...is the graphical user interface which allows a user to prepare shows which will then be played out manually using the same user interface. Such shows can be filled with QuickTime movies, live video input, static and dynamic graphics as well as router and GPI events.



## 2

# REQUIREMENTS

## 2.1

## REQUIREMENTS

## BASIC SYSTEM REQUIREMENTS

You will need one of the following Macintosh models and one of the following video devices to turn a standard Macintosh computer into a playout server using just:live.

<b>Macintosh Model</b>	Mac Pro, Mac mini, iMac, Xserve <sup>1</sup> or MacBook Pro <sup>2</sup> – Intel only		
<b>RAM</b>	At least 4 GB		
<b>GPU<sup>3</sup></b>	<b>ATI</b>	<b>NVIDIA</b>	
	Radeon HD 3870	GeForce GT 120 <sup>4</sup>	
	Radeon HD 4870	GeForce GTX 285 <sup>4</sup>	
	Radeon HD 5770/5870	Quadro FX 4000/4800	
<b>Operating System</b>	Mac OS 10.7.4 or higher. Administrator account required for installation and configuration		
<b>Supported Video Devices</b>	<b>AJA</b>	<b>Blackmagic<sup>5</sup></b>	<b>Matrox</b>
	IoXT	UltraStudio 3D	MX02 <sup>6</sup>
	Kona LHe <sup>6</sup>	DeckLink HD Extreme	
	Kona LHi	DeckLink SDI	
	Kona 3(G)	DeckLink Studio	
<b>Optional</b>	ToolsOnAir Template Package can be downloaded from <a href="http://support.toolsonair.com">http://support.toolsonair.com</a>		

**(1)** The built-in NVIDIA GeForce GT 120 in the last generation Xserve comes as a "Mobile PCI-Express Module" (MXM). This module does not run at full PCIe speed. We recommend to upgrade the Xserve with a graphics card which uses the full speed PCIe ports of the system. Otherwise the system can only handle simple graphics in SD and no graphics at all in HD.

**(2)** Testing only.

**(3)** Please consult the graphics card vendor or Apple for more information regarding the compatibility of your graphics card and the OS version you are using.

**(4)** These cards are only compatible with Mac Pro machines with model identifier "MacPro4,1" (or greater). To identify the Mac Pro model open up the "System Information" application on the appropriate machine and locate the "Model Identifier" line in the "Hardware Overview" section.

**(5)** It is not possible to use DeckLink cards together with their internal key to switch from QuickTime movie playout to live. This means that you cannot use the switch-to-live feature with a video device from Blackmagic.

**(6)** SD only.

### Note



When using a Mac with a switchable graphics card make sure to change the graphics card setting in the "Energy Saver" preference pane to "Higher Performance".



These are the minimum requirements to do a playout in SD.

	Testing	Good	Better	Best
<b>Macintosh Model (Model Identifier)<sup>1</sup></b>	MacBook (MacBook5,1)	Xserve (Xserve2,1)	Mac Pro (MacPro3,1, MacPro4,1)	Mac Pro (MacPro5,1)
	MacBook Pro (MacBookPro3,1)		Mac mini 2.5 GHz i5 CPU (Macmini5,2) <sup>2</sup>	Mac mini 2.7 GHz i7 CPU (Macmini5,2) <sup>2</sup>
	iMac (iMac5,1)	Mac Pro (MacPro1,1)	Xserve (Xserve3,1) <sup>3</sup>	
	Mac Mini (Macmini3,1) <sup>2</sup>			
<b>RAM</b>	4 GB		8 GB	
<b>GPU</b>	Only dedicated GPUs are supported	ATI X1300	ATI Radeon HD3870	NVIDIA GeForce GTX 285
		ATI HD2600 XT		NVIDIA Quadro FX 4000/4800 <sup>4</sup>
		NVIDIA GeForce 7300 GT	NVIDIA GeForce GT 120	ATI Radeon HD 4870 <sup>4</sup>
		NVIDIA GeForce 8800 GT		NVIDIA GeForce GT 120
			ATI Radeon HD 5770/5870 <sup>5</sup>	
<b>Video Card</b>	–	See "Requirements: Video Devices"		

(1) To identify a Mac model, open up the "System Information" application on the appropriate machine and locate the "Model Identifier" entry in the "Hardware Overview" section.

(2) Mac mini requires dedicated GPU.

(3) Upgrade with NVIDIA GeForce GT 120 (or better) required.

(4) Also usable in Mac Pro models prior to MacPro4,1.

(5) Also usable in Mac Pro model MacPro4,1.

These are the minimum requirements to do a playout in HD.

	Testing	Good	Better	Best
<b>Macintosh Model (Model Identifier)<sup>1</sup></b>	MacBook (MacBook5,1)	Xserve (Xserve3,1) <sup>3</sup>	Mac Pro (MacPro3,1, MacPro4,1)	Mac Pro (MacPro5,1)
	MacBook Pro (MacBookPro3,1)		Xserve (Xserve3,1) <sup>4</sup>	Mac mini <sup>2</sup> 2.7 GHz i7 CPU (Macmini5,2)
	iMac (iMac5,1)	Mac Pro (MacPro2,1)	Mac mini <sup>2</sup> 2.5 GHz i5 CPU (Macmini5,2)	iMac (iMac12,1)
	Mac Mini <sup>2</sup> (Macmini3,1)			
<b>RAM</b>	4 GB		8 GB	
<b>GPU</b>	Only dedicated GPUs are supported	NVIDIA GeForce GT 120 <sup>5</sup>	ATI Radeon HD3870	NVIDIA GeForce GTX 285
		NVIDIA GeForce 7300 GT	NVIDIA GeForce GT 120	NVIDIA Quadro FX 4000/4800 <sup>6</sup>
		NVIDIA GeForce 8800 GT		ATI Radeon 4870 <sup>6</sup>
				ATI Radeon HD 5770/5870 <sup>7</sup>
<b>Video Card</b>	–	See chapter "Requirements: Video Devices"		

**(1)** To identify a Mac model, open up the "System Information" application on the appropriate machine and locate the "Model Identifier" entry in the "Hardware Overview" section. **(2)** Mac mini requires dedicated GPU. **(3)** When using built-in GT 120: Select "8 Bit" display mode for the video card in the just:out system preference pane. Video frames are sent directly to the video output card and not via the GPU. As the video frames are not sent via the GPU this does impose restrictions on the functionality of just:out. As compositing is no longer possible, just:out in this mode is no longer able to render any graphics, so it will only play out the video layer and will ignore any FX layers assigned to it in just:connect. just:out cannot scale video in this mode. **(4)** Upgrade with NVIDIA GeForce GT 120 (or better) required. **(5)** NVIDIA GeForce GT 120 only works in MacPro4,1 and Xserve3,1. **(6)** Also usable in Mac Pro models prior to MacPro4,1. **(7)** Also usable in Mac Pro model MacPro4,1.

	<b>Good</b> SD only	<b>Better</b> SD and limited HD	<b>Best</b> SD and HD
<b>Blackmagic Design</b>		_ 1	DeckLink SDI DeckLink Studio DeckLink HD Extreme UltraStudio 3D UltraStudio Express
<b>AJA</b>	IoHD	Kona LHe	Kona 3(G) Kona LHi IoXT
<b>Matrox</b>	MX02	–	–

(1) When using driver version 9.5.3 (or later) the Blackmagic devices also work in HD.



### Attention when using just:live with Blackmagic DeckLink cards

It is not possible to use DeckLink cards together with their internal key to switch from the live incoming signal to QuickTime movie playout. This is because the audio from the live signal is sent to the output as soon as the Blackmagic "Live Key" application is started and therefore audio from a QuickTime movie played in just:live would never be sent to the output.



### Note about AJA driver versions

Always use the latest drivers from the AJA website. Make sure to use the NDD driver version, otherwise realtime graphics will not work.



### Note about Blackmagic driver versions

We recommend to use at least driver version 9.5.3.

## 2.5

### REQUIREMENTS

## SUPPORTED CODECS

Currently the following codecs are supported by the just:out playout engine:

<b>Supported Codecs</b>  (1) For more information about MXF support please visit <a href="http://www.mxf4mac.com">www.mxf4mac.com</a>  (2) Embedded alpha information is properly sent to the video card (fill and key). Apple Animation Codec is deprecated. If you need alpha we recommend the ProRes 4444 codec.	<b>SD</b>	<b>HD</b>
	DVCPRO, DVCPRO50	DVCPRO HD
	DV, DV Stream	
	DVCAM	HDV
	MPEG-4	
	JPEG	XDCAM HD/ES/EX (1080i and 720p)
	IMX	
	MXF <sup>1</sup> (including multi-audio support)	
	All Apple ProRes Codecs, ProRes 4444 <sup>2</sup>	
	Apple Animation Codec <sup>2</sup>	
H.264		

- It is possible to mix all codecs in the same channel, i.e. mixing SD and HD in the same timeline works.
- The video scaling is done in software, therefore it is not comparable to hardware scaling.
- The field order will be inverted automatically if needed. This can be overruled per clip with the "Invert Fields" function in the inspector.

## 2.6

### REQUIREMENTS

## CODEC ACQUISITION

Due to licensing restrictions we are not allowed to ship any Apple codecs along with our products. In order to obtain the appropriate professional Apple codecs (ProRes, IMX etc...), you need to have an already installed version of Final Cut Studio 3 or Final Cut Pro X on the machine used for playout.

The professional codecs are also available via Apple's Software Update upon a new installation of Final Cut Pro X or as an update installer under the following URL:

- <http://support.apple.com/kb/DL1396>

Please check regularly for new codec updates on Apple's support site or via the Software Update mechanism built into OS X. Please note that this update installer will check for an already installed version of Final Cut Pro 7 or Final Cut Pro X.

The same applies for other codec vendors or readers. If you plan to playout MXF files, please contact MXF4mac for licensing information:

- <http://www.mxf4mac.com>

## 2.7

### REQUIREMENTS

## STORAGE SYSTEMS

We have been testing configurations with standard internal disks but also various systems from different vendors using direct attached eSATA based RAID controllers, network attached storage and SAN systems. The all have been working properly as soon as they have been recognized by the OS.

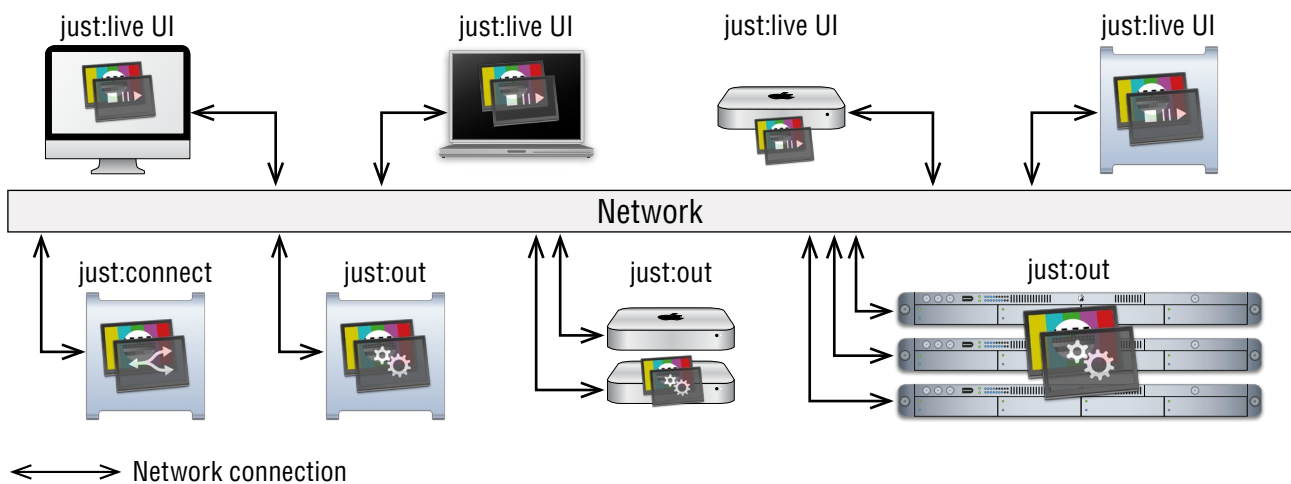
just:out has an internal buffer which can be configured to overcome a problem with the data throughput of the playout storage for a short period of time. Nonetheless we recommend that the minimum data rate the storage can provide is at least 4x higher than the data rate of the used QuickTime movies + the data rate needed by any graphic elements. When the playout is on air we also strongly recommend to avoid any unnecessary load on the storage system (like copying from one partition to another).

## 2.8

### REQUIREMENTS

## NETWORK SETUP

It does not matter if your machine is part of a multi zone network environment with many other machines or a single machine with no network connection at all. All ToolsOnAir components are highly dependant on a properly configured and stable network connection. Please contact your network administrator or local dealer for more information if you need help. It is also possible to use an automated way to configure the network called "Bonjour". This service is turned on by default, does not require any configuration and can be used for testing purposes.



# 3

# MAC OS CONFIGURATION

We recommend installing the operating system with as few options enabled as possible. Once the installation has finished, install all the updates which are available through Apple's Software Update. After that configure the System Preferences like described here. Please also avoid installing background applications like MenuMeters, Growl or additional Dashboard widgets.

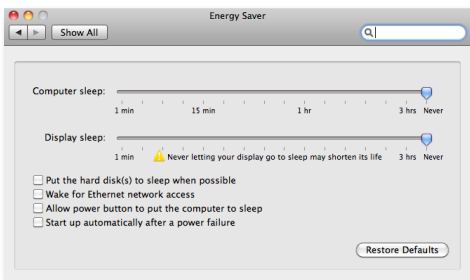
## Notes



- Currently we do not support the server version of OS X due to the high number of services running in the background
- Once one of the ToolsOnAir components has been started, never change one of the settings described below. Changing OS settings during playout can harm the final output and even crash the engine

## 3.1

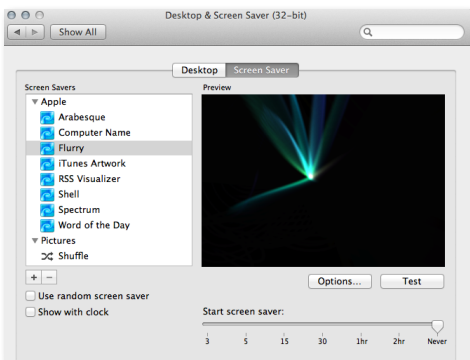
### MAC OS CONFIGURATION ENERGY SAVER



Disable the computer sleep function in the "Energy Saver" system preferences pane. Set the computer and display sleep to "Never" and also uncheck all four checkboxes (or disable at least the hard disk sleep and the power button sleep feature.)

## 3.2

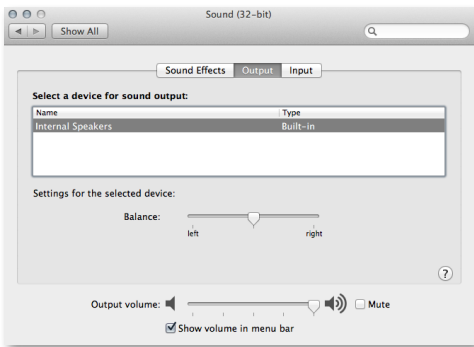
### MAC OS CONFIGURATION SCREEN SAVER



Set the "Start screen saver" setting to "Never".

### 3.3

## MAC OS CONFIGURATION SOUND

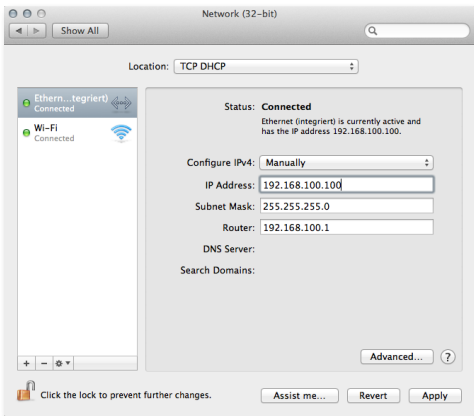


Here you define which audio output is used by the operating system for playing system sounds. The same output is used by the just:live UI when playing movies in the preview windows.

It is important to select the internal speaker/line-out but never the AJA/Blackmagic video device as the input/output device.

### 3.4

## MAC OS CONFIGURATION NETWORK



Delete all unneeded network connections here and change the order of the connections so that the IP address you are going to use for TOA internal communication has the main priority.

If your network connection is not 100% stable, please follow the guidelines which can be found later in this document to use the internal network address.

### 3.5

## MAC OS CONFIGURATION STARTUP DISK



Make sure that the disk or partition which will be used for the ToolsOnAir components is selected as the startup disk.

## 3.6

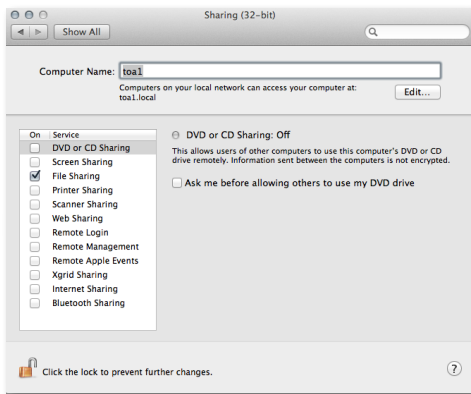
### MAC OS CONFIGURATION SOFTWARE UPDATE



Make sure your system has the latest software updates installed, then disable the automatic software update function.

## 3.7

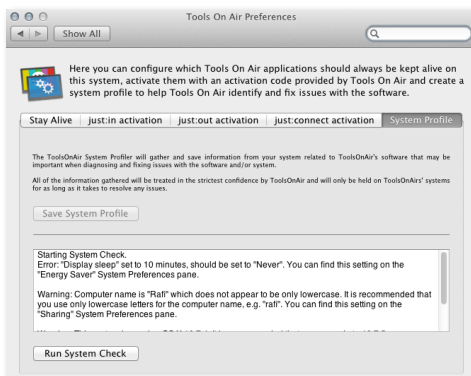
### MAC OS CONFIGURATION SHARING



Make sure that you use only lowercase letters for the computer name and avoid special characters.

## 3.8

### MAC OS CONFIGURATION TOA SYSTEM CHECK



Once just:live is installed, you can make sure that all system relevant settings are set up properly. Start the Tools On Air preference pane, activate the "System Profile" tab and click on the "Run System Check" button to get a list of issues and recommendations related to the configuration of your system.



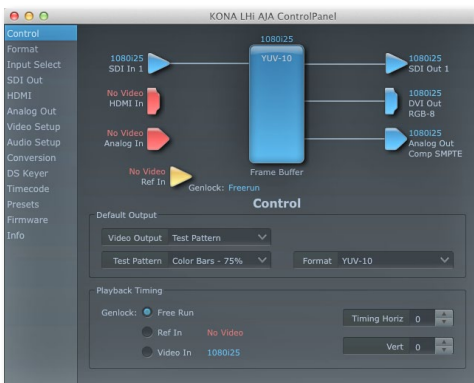
## 4

# VIDEO DEVICE CONFIGURATION

You need to configure the video device first in order to use it with just:out. This chapter deals with two common manufacturers of just:out compatible video devices: AJA and Blackmagic.

## 4.1

## VIDEO DEVICE CONFIGURATION AJA CONTROL PANEL



### Control

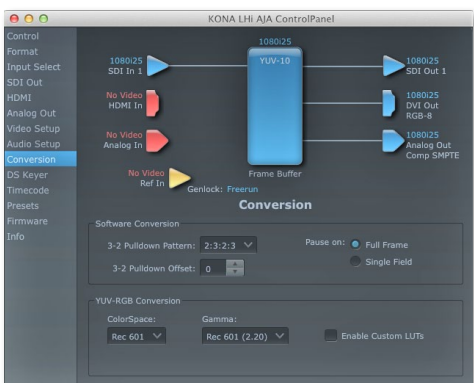
Here you choose the "Default Output" you'd like to have when just:out is not started. Also configure the "Playback Timing":

- Choose **"Free Run"** if you do not have a reference signal attached to the AJA device
- Choose **"Ref In"** if you have a reference signal attached to the AJA device. This implies that you don't turn on the downstream keyer for the switch-to-live functionality
- Choose **"Video In"** if you turn on the downstream keyer to enable the switch-to-live functionality



### Format

Under the "Format" tab you select the primary format your playout will use. This is usually the same format you select in the preferences of just:out. Although just:out will change the format automatically, we recommend to set the primary and – if available – the secondary format here. Defining a secondary format allows you to get two different output formats of the same playout. Also set the "RGB Range" to "SMPTE".



### Conversion

Set "Pause on" to "Full Frame". When using an RGBA mode (= graphics enabled), configure the "YUV-RGB Conversion" settings like shown. It is likely that you will use "Rec 601" when working in SD and "Rec 905" when working in HD.

## VIDEO DEVICE CONFIGURATION BLACKMAGIC PREFERENCE PANE



### Blackmagic Preference Pane Configuration

Open the DeckLink System Preference Pane and make sure the "Remove field jitter when video is paused" option is not activated. Activating this option will make the playout playing in frames instead of fields and therefore losing half of the resolution. You can configure the other settings according to your needs.

## VIDEO DEVICE CONFIGURATION REFERENCE SIGNAL

If your video hardware provides a reference signal input you should attach a stable reference signal to this input and enable the feature (in the software provided by the vendor). This will allow just:out to run synchronized and therefore more accurate which is even more important when using the redundant playout feature.



### Note

Using the AJA downstream keyer means that the video card synchronizes to the incoming video and not to the reference signal. Therefore any reference signal attached to the "Ref In" will be ignored, so make sure that the incoming video signal is stable. In order to stabilize the signal in advance (i.e. before it is sent to the video card input) you must use a frame synchronizer. Suited frame synchronizers can be found here:

- <http://www.aja.com/products/fs/>

## LTCIN AS MASTER TIMECODE REFERENCE



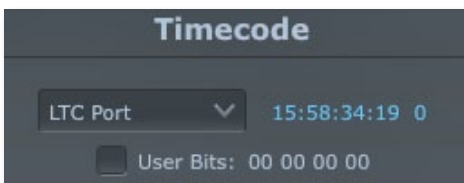
### Input Select

By default just:out uses the NTP (= network Time protocol) of the local machine as the master timecode source. Because the NTP is more or less accurate we recommend to use a stable LTC source as master timecode. To synchronize your master timecode to a LTC source you can attach a LTC signal to the LTCin of your AJA Kona device or the audio input of your Mac. Supported AJA devices for this purpose are: LHi, Kona3(G) and IOxt.

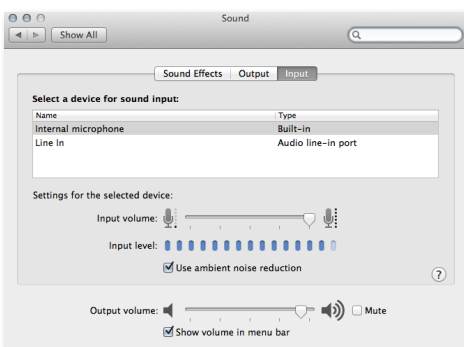


### Timecode

Depending on your video device you have to configure the "LTC/Ref" setting in the "Input Select" configuration (KonaLHi) or the "Input" setting in the "Timecode" configuration (Kona3G and IOxt) like shown in this screenshot.



Make sure that the incoming LTC signal is shown in the AJA control panel.



### Sound Preference Pane

When using the audio input of the Mac you can see if the signal is being received in the "Sound" preference pane. Choose the audio input to which the LTC reference signal is attached to and check if there is a signal coming in.

Once the LTC timecode is received you can configure just:out to use this timecode as the reference timecode for the layout.

## GRAPHICS FILE HANDLING

Compared to other systems, just:out can handle graphic elements without using the downstream keyer of the video device. Because of this there is no need to configure any hardware to make the realtime graphics processing work. In addition, graphics can be added to the output without the need of a video device at all. This is very useful for those customers using the optional streaming engine as their final output. Such a configuration requires a single Mac mini and nothing else.

## 5

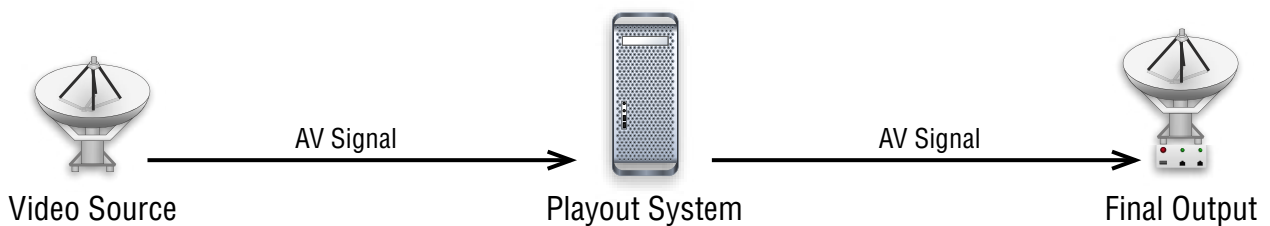
# LIVE SIGNAL HANDLING

Besides playing videos and graphics, just:live also allows you to manage live incoming signals like studio signals or satellite feeds. This can be done using the more traditional way by controlling a mixer/router or by configuring the hardware to use the pass-through mode. Depending on your needs you will have to use one of the following configurations.

## 5.1

## LIVE SIGNAL HANDLING

## SETUP A – SINGLE SOURCE USING PASS-THROUGH CHANNEL

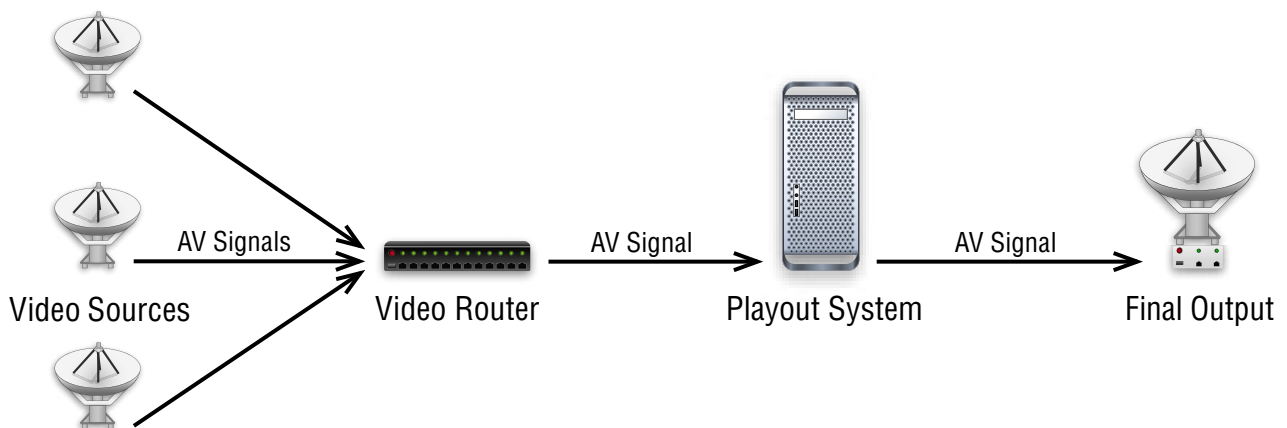


Activate the built-in downstream keyer of the AJA card (like described later in this chapter) to switch between a single live source and the QuickTime movie playout.

## 5.2

## LIVE SIGNAL HANDLING

## SETUP B – MULTI SOURCE USING PASS-THROUGH CHANNEL

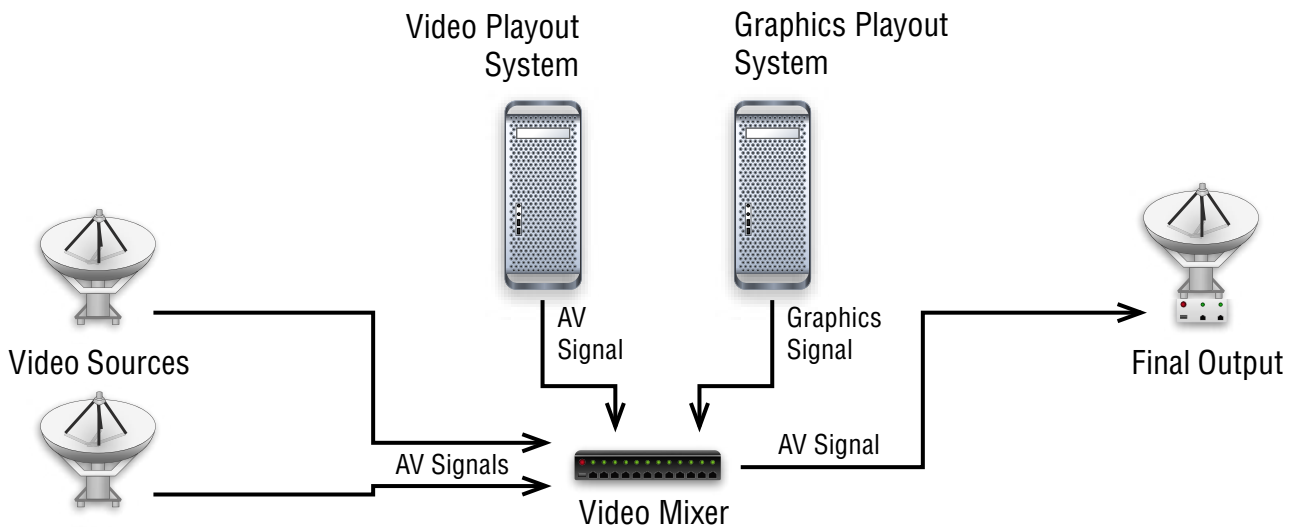


Activate the downstream keyer of the AJA card (like described later in this chapter) and configure router control/GPI events if you have more than one live source and you want to use the pass-through mode.

## 5.3

### LIVE SIGNAL HANDLING

## SETUP C – TRADITIONAL SETUP



Activate router control/GPI events if you want to control a router to switch between the QuickTime movie playout and any number of live signals without using the pass-through mode.

Although the playout of videos and graphic elements is done using two separate machines, the control of the playout can be done using a single user interface.

### Note



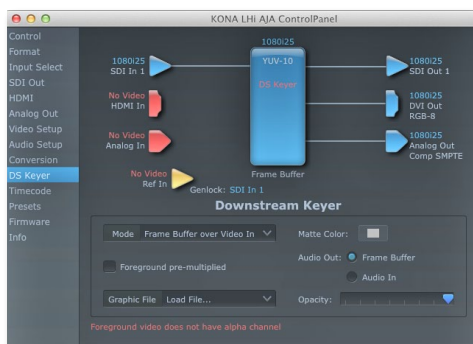
Using this setup it is also possible to control the router using another system so that just:live acts as a simple player.

## 5.4

### LIVE SIGNAL HANDLING

## PASS-THROUGH MODE CONFIGURATION

The advantage of using pass-through mode is that it is possible to switch between a live signal and the playout of a QuickTime movie without the need of a video router. In addition it is possible to add graphics on top without the need of a second video device.



### Activating the built-in downstream keyer of an AJA device

Configure the AJA downstream keyer according to this screenshot to activate the pass-through mode:

- Mode: "Frame Buffer over Video In"
- Audio Out: "Frame Buffer"

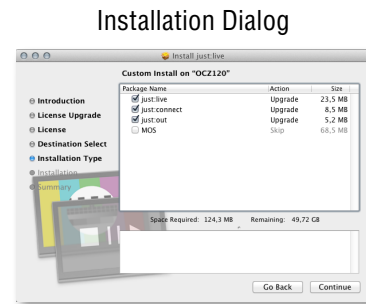
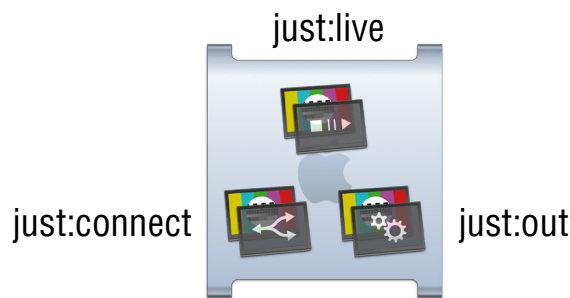
# 6

# SETUP VARIANTS

## 6.1

### SETUP VARIANTS MINIMAL SETUP

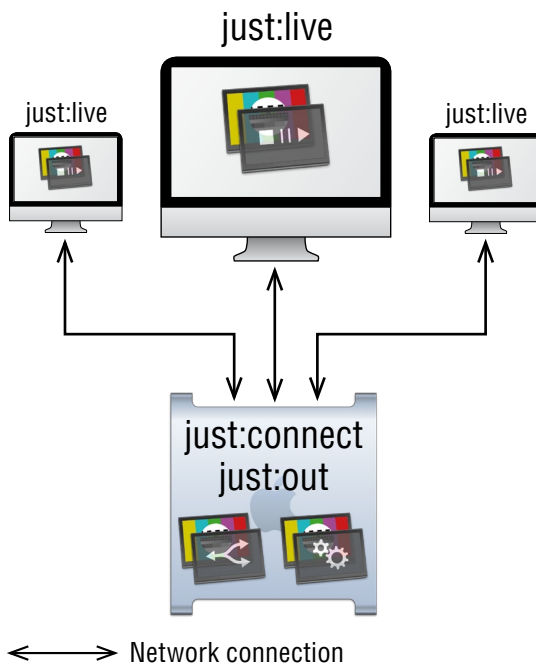
This figure shows a minimal setup. Most users will rely on this solution to do a ployt which only incorporates simple graphics.



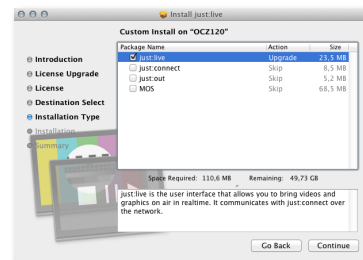
## 6.2

### SETUP VARIANTS COMMON SETUP

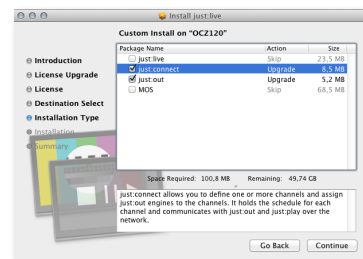
This is the common setup. The just:live UI runs on a Mac – in this example an iMac – which is used to create and control the schedule. just:connect and just:out are running simultaneously on a separate Mac.



Installation Dialog

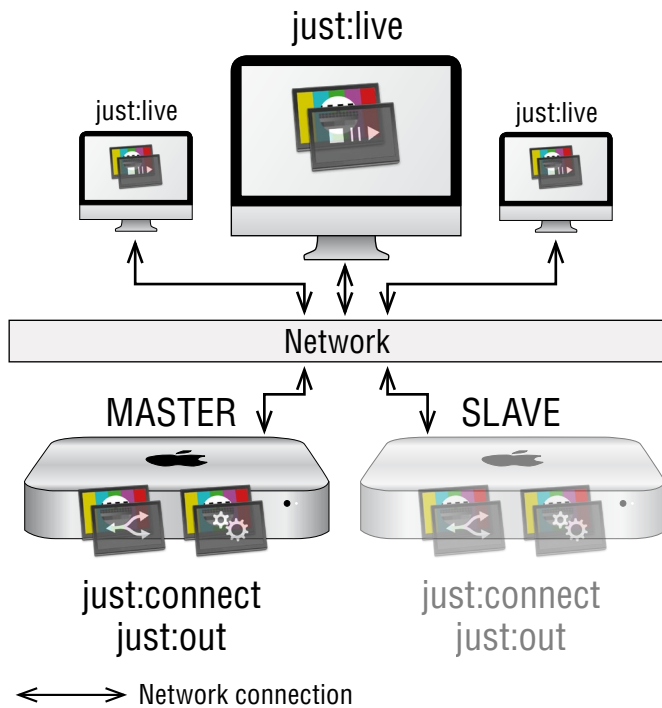


Installation Dialog

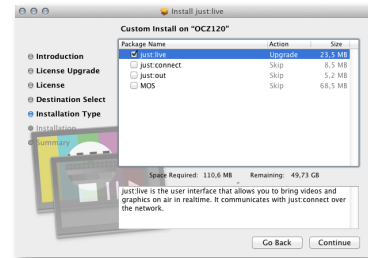


## REDUNDANT SETUP

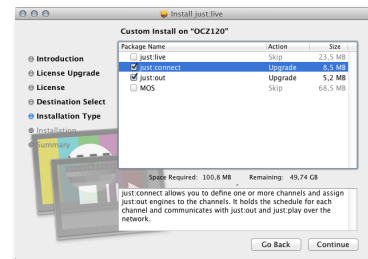
This figure shows a typical redundant setup. just:connect is installed on both – the master and the slave playout machine – but runs on the master playout machine where the slave machine runs only just:out. just:connect is installed on the slave playout machine but not started, so in case the master machine fails, this machine can take over. One or several just:live UIs are controlling this channel. This setup can also be reproduced in cases where more than one channel is required.



Installation Dialog

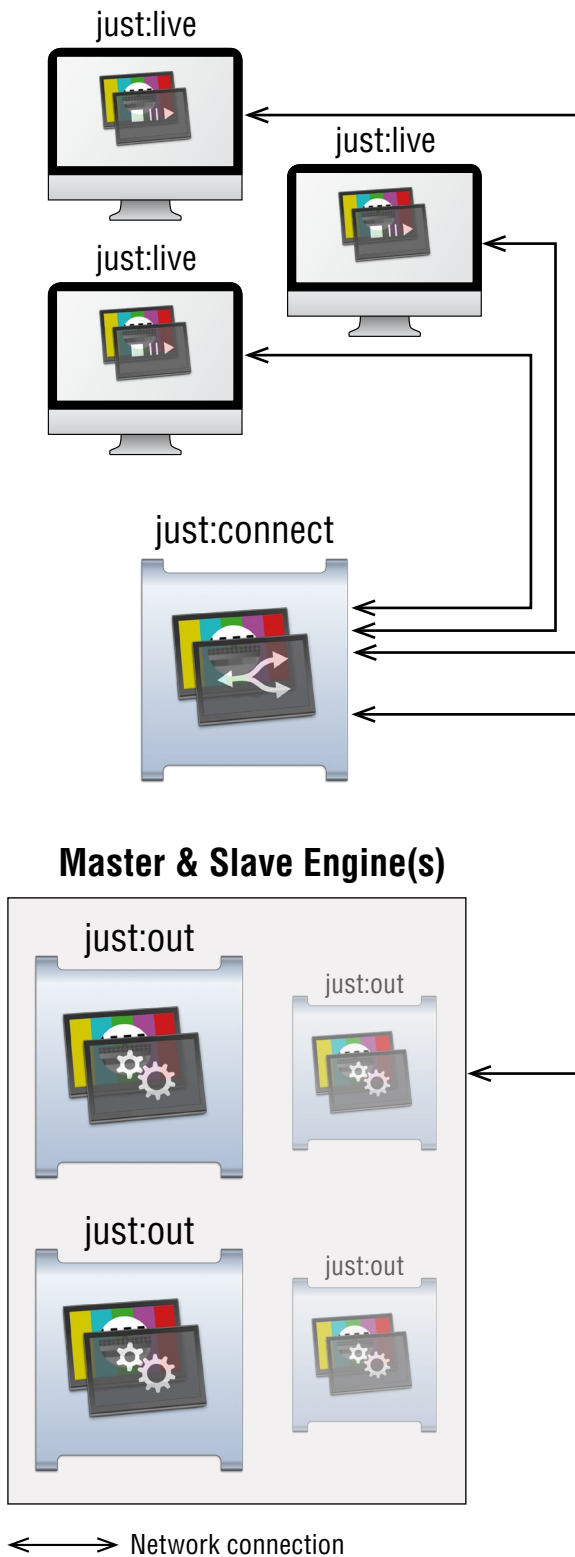


Installation Dialog

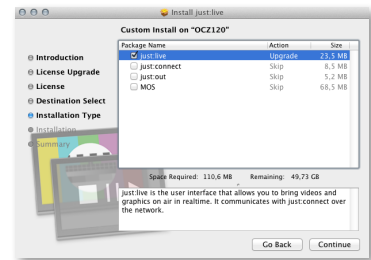




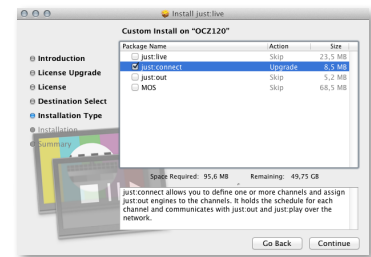
This figure shows a more complex setup where several just:out engines are available in the network. Those are managed by just:connect which "broadcasts" the resulting channels into the network again. The users then connect to those channels using the just:live UI.



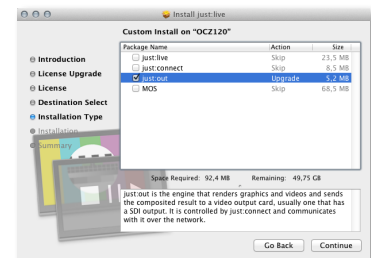
Installation Dialog



Installation Dialog



Installation Dialog



## ADVANTAGE OF USING A SEPARATE MACHINE FOR THE JUST:LIVE UI

just:out, just:connect and just:live can be installed on a single machine, but there are several advantages when using separate machines for the UI and the engine: The actual CPU/GPU load is distributed. Also the engine can not be affected by user mistakes. Using multiple machines is also more fail-safe. just:connect allows you to configure a slave engine for each layer (video or FX layers). This means another physical machine takes the place of a failing machine.

When using multiple just:live instances to control the same channel it is possible to work simultaneously on a channel on a first come first served basis. Separating the UI from the engine also allows the user working on the machine which runs the just:live UI to turn off the machine without interrupting the playout.



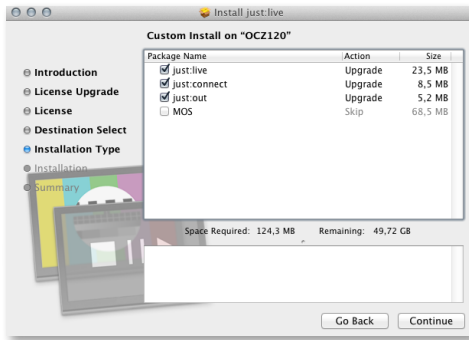
### Note

Although it is possible to manage several channels using a single just:connect instance, all channels managed by the same just:connect must use the same time base. So if you have channels using a different time base (i.e. one channel SD and one channel 50 fps) you must use a separate just:connect for each time base.

## 7

# SOFTWARE INSTALLATION

We assume that you have been configuring all machines using the hardware guidelines we have listed in the previous chapters and that you have followed the recommendations given by the video device vendors regarding the installation of their hardware, especially the slot assignment. After that open the just:live installer package and follow the instructions found in this chapter.



The Installer identifies the machine on which it is executed. You will be warned if the machine is incompatible, but you can install the software nevertheless.

If you want to install the just:out engine on hardware which is officially not supported you must manually activate the installation of just:out by activating the checkbox during the installation.

When the installation has finished the installed application parts are located at "/Applications/Just Live". When using different machines you have to install the required components of just:live separately on each machine using the just:live installer. The next page contains details about this procedure.

If you want to create realtime graphics please download Composition Builder and the Template Package from our internet support site <http://support.toolsonair.com>.

## Notes



- The installation provides a fully functional demo of just:out and the playout will display a watermark. You can acquire a license key to disable the watermark.
- The Installer also installs one preference pane: /Library/PreferencePanes/Tools On Air Preferences.prefPane

## Attention



Never install Composition Builder (our realtime graphics template maker) on the machine running just:out. Starting Composition Builder (or Quartz Composer) on such a machine can terminate a running playout!

## INSTALLING THE COMPONENTS ON DIFFERENT MACHINES

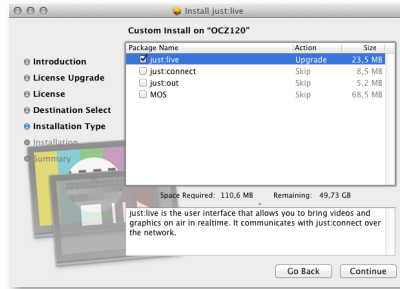
In this example we assume that the installation takes place on three separate machines. Here you see the components' functions and where they would have to be installed.

### just:live



User Interface

### Installation Dialog



### just:live

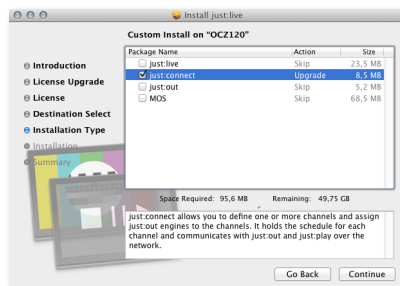
Install this on the machine(s) that will be used to control the payout.

### just:connect



Management

### Installation Dialog



### just:connect

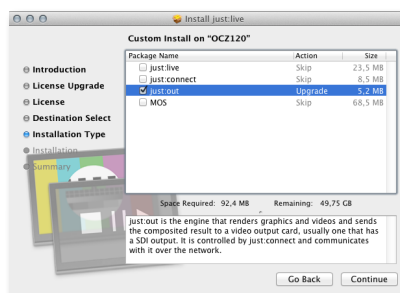
Install this on the machine(s) which will be used to define channels and connect just:live with just:out (explained later in chapter "just:connect").

### just:out



Video + Graphic Compositing

### Installation Dialog



### just:out

Install this on the machine(s) which are responsible for the final output through the video hardware (explained later in chapter "just:out").

## 8

# JUST:OUT



just:out provides the final output. It renders the image in realtime on the host GPU using QuickTime movies and graphic elements. Even when playing only movies the speed of the host GPU is very important. These are the key features:

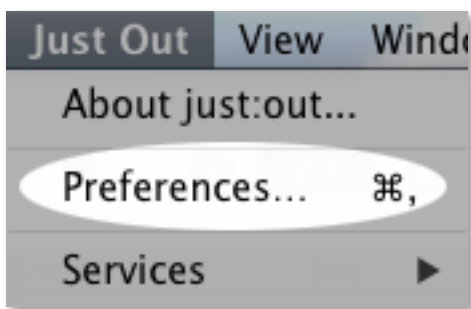
- **Built-in Preferences:** To make the setup of the engine as smooth as possible you can start the just:out preferences from within just:out itself. In case something of the setup changes, just:out will open the preferences automatically so that the system administrator can configure just:out immediately.
- **Diagnostic Window:** Displays engine statistics like the buffer status, master time, reference time and the name of the clip which is currently playing in the first video layer. Three buttons provide access to the log files, allow you to save the current status of just:out and to reset the values shown in the diagnostic window.
- **Preview Window:** Take a sneak peek of the current playout. It is optionally also possible to start the preview automatically every time just:out starts. Because the preview shows only the rendered output of the GPU, any live incoming signal is not shown here.
- **Quit-Safe:** You can quit just:connect and just:live without stopping the actual playout. When doing so with just:out, the playout will stop. Therefore just:out does not allow to be closed using command + Q. To quit just:out you have to use the "Quit" command from the menu and confirm a dialog.
- **Save Image As:** This generates a snapshot of the current playout saved as a still image. This image can – for example – be used by our tech support to analyze visual issues.

## 8.1

## JUST:OUT

## PREFERENCES

After installation just:out must be configured to work with the installed video device. The following chapters are about the configuration of just:out.



### Using the just:out Preferences

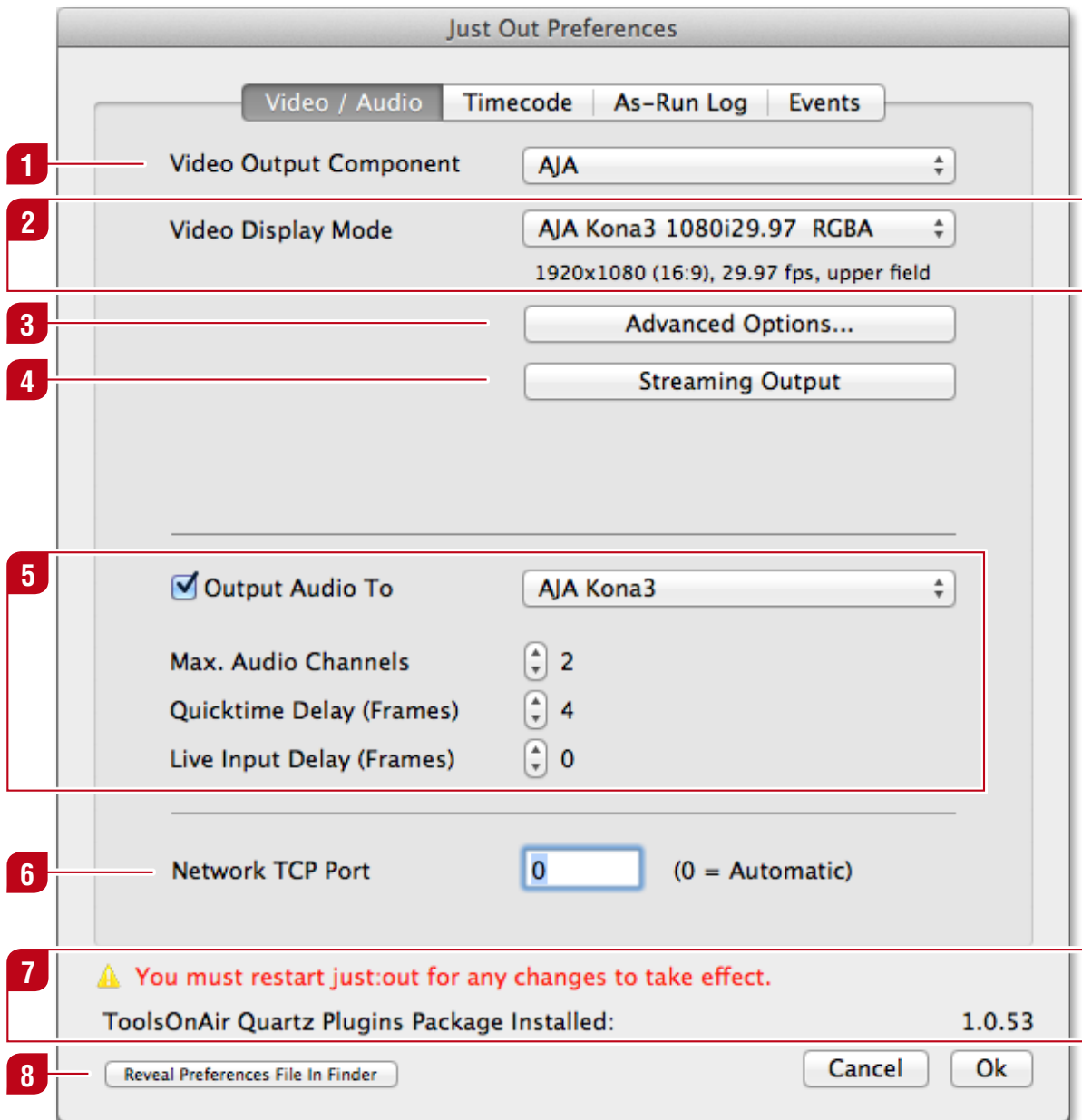
When starting just:out for the first time the preferences will open automatically.

The preferences can be accessed from within just:out by selecting "Preferences..." in the "Just Out" menu.



### Attention

When changing the preferences you must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

**1 Video Output Component**

Select the video output device which will be used to display the final output (for example an AJA video device).

**2 Video Display Mode**

Select the video resolution which should be used for the final output. Selecting 8-bit mode results in video playout only, and some video functions will be inactive then. Select 8-bit if the graphics capabilities of your hardware are limited. For full playout select a RGBA mode.

**3 Advanced Options**

See next chapter.

**4**

### Streaming Output

See chapter "Video / Audio: Streaming Output" and Appendix at the end of the document.

**5**

### Audio Configuration

If desired set an audio output here. With an AJA card select "AJA Kona", for Blackmagic select "Blackmagic Audio". The "Max. Audio Channels" setting allows you to specify the number of audio channels played out by the selected device. This is helpful if a third party audio device (or an encoder for example) does not support "empty" audio tracks. You can define the maximum number of audio channels sent to the video device as well as an audio delay for QuickTime movies/the live video input as needed. This is useful in case you have to adjust the AV synchronization because of a third party hardware which adds a delay to the video.

**6**

### Network TCP Port

This is the network TCP port used by just:out when publishing its service over the network. By default this is set to "0", meaning that a port will be automatically allocated. Should you wish to use a fixed port because you intend to connect to just:out using a fixed IP address instead of Bonjour, you will also need to enter a fixed port number between 1 and 65535.

**7**

### Version Info

Shows which version of the TOA Quartz Plugins Package is installed. Useful for tech support with the helpdesk.

**8**

### Reveal Preferences

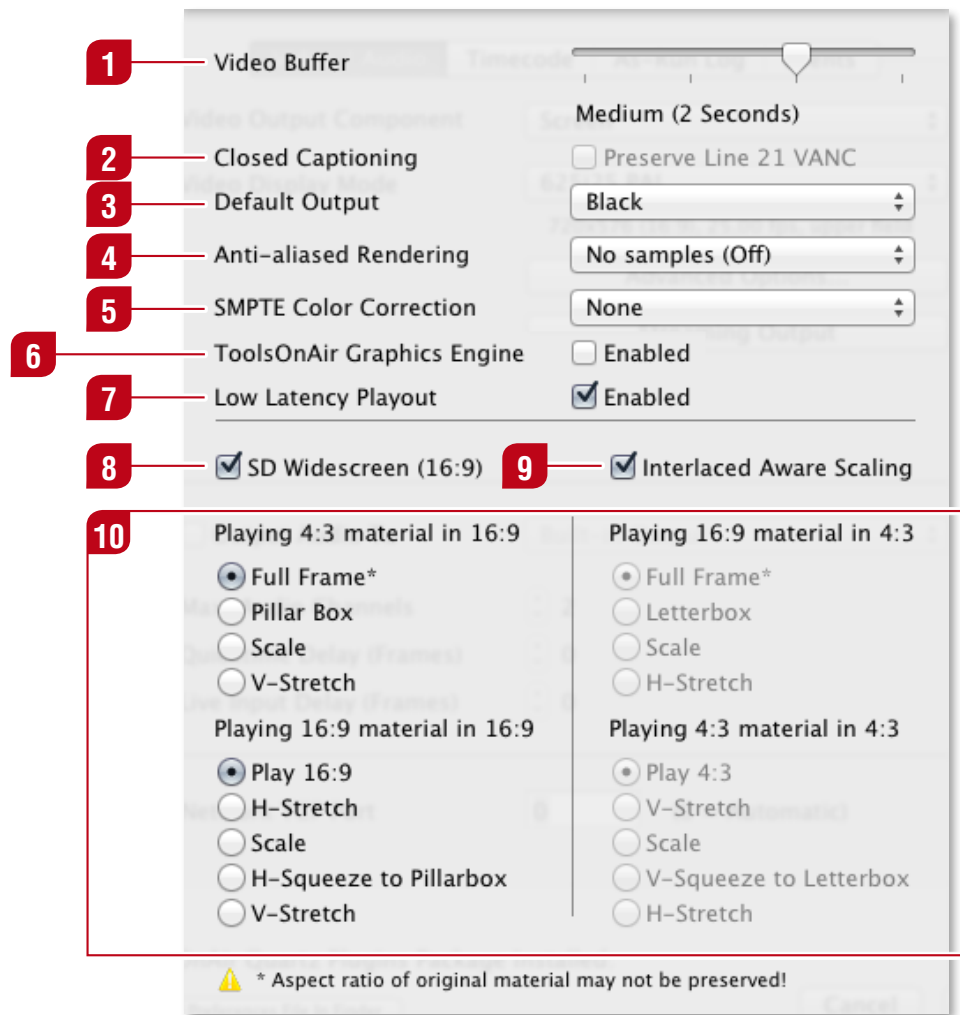
Shows the just:out preference file in the Finder.



### Note

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## VIDEO / AUDIO: ADVANCED OPTIONS

**1 Video Buffer**

Select a higher buffer if the data rate needed for playing the video and graphic files is high and/or the continuous data rate your storage system is able to deliver is low. If your storage system can deliver a very high continuous data rate and the data rate needed to play the video and graphics files is low, you can select a small video Buffer.

**2 Closed Captioning (optional)**

Activate this option to preserve CC data in line 21 even while playing realtime graphics on top.

**3 Default Output**

Defines the default output whenever no video is playing. Make sure you activate the downstream keyer of the AJA video device when selecting "Live Source". Otherwise the live signal will not be passed through even when selecting it here.

**4 Anti-aliased Rendering**

Anti-aliasing tries to counteract the jagged appearance of polygon edges. Enabling this function can have a considerable impact on the rendering performance of old or low-cost GPUs. If you wish to use anti-aliasing, evaluate if your system configuration is able to provide the required rendering capabilities.



## 5 SMPTE Color Correction

This settings allows you to handle the difference between the full color space (0-255) and the SMPTE Color Space (16-235).

- Select "None" if your movies and your graphic files are using the SMPTE color space.
- Select "Cropped" if the movies are using the SMPTE color space and the graphic files do not.
- Select "Scaled" if your movies and your graphics files are both not using the SMPTE color space.

## 6 ToolsOnAir Graphics Engine

Enabling this feature allows TOA Graphics Engine files and QuickTime movies with audio to be played on a FX layer. Enabling this feature also disables the scaling functionality of the Quartz graphics rendering engine which has a direct impact on the quality whenever the image is changed in its pixel dimensions (scaling and aspect ratio change). Therefore make sure to activate this feature only in case you do not need the scaling function but you do need the ability to play QuickTime movies with audio in one of the FX layers.

## 7 Low Latency Payout

Enable this option for the lowest latency between pressing the "Play" button and the actual payout of a movie. Deactivate this option when using MXF files or movies which are taking some time to decompress like XDCam or H.264. This option is only valid for just:live.

## 8 SD Widescreen

This option defines the aspect ratio when playing in SD. The selection made here has a direct impact on the aspect ratio options available below.

## 9 Interlaced Aware Scaling

When activated, any QuickTime movie which has to be scaled (SD-HD, aspect ratio conversion) will have additional interlaced-aware filtering applied to it in order to preserve the interlace fields and to improve the quality of the scaled QuickTime movie.

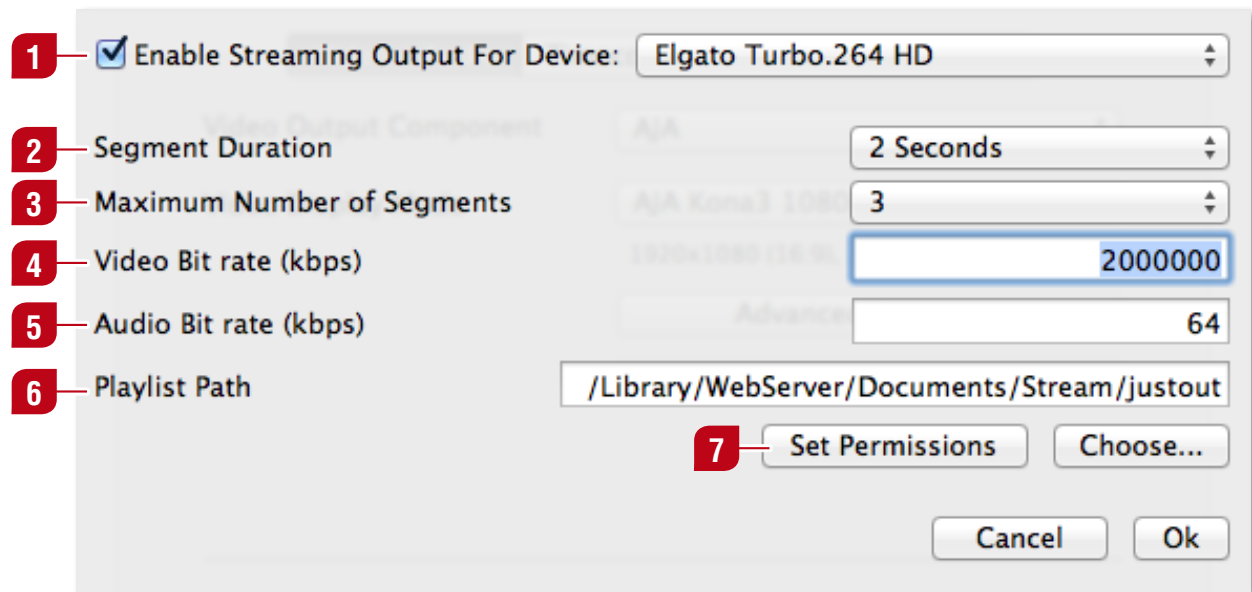
## 10 Aspect Ratio Control

Here you can define how differences of the aspect ratio should be handled. This preset can be overwritten for each QuickTime movie in the inspector of just:live. In addition it is possible to change the aspect ratio of movies which match the engine's aspect ratio but have been saved in the wrong aspect ratio. For a visual description please refer to the chapter "Aspect Ratio Control" in the appendix at the end of this document.



### Note

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.



- 1 Enable Streaming Output For Device**  
 In addition to our TOA streaming out option you will have to buy and connect an "Elgato Turbo.264 HD" USB device. Once you have installed the Elgato hard- and software you can activate and setup the HTTP streaming out here.
- 2 Segment Duration**  
 Here you can define how long a single segment is.
- 3 Maximum Number of Segments**  
 Here you can define the number of segments which will be saved.
- 4 Video Bit rate**  
 Define a video bit rate which fits your needs.
- 5 Audio Bit rate**  
 Define an audio bit rate which fits your needs.
- 6 Playlist Path**  
 Define a path where the files should be saved to.
- 7 Set Permissions**  
 Once everything has been setup you can verify that you have write permissions for the selected folder. Start just:out to get the final output (including video, audio and graphics) encoded in realtime in addition to the final output through the selected video device.



### Note

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## TIMECODE CONFIGURATION

Video / Audio | **Timecode** | As-Run Log | Events

Reference (Input) Timecode \_\_\_\_\_

**1** Timecode Source   Synchronize master timecode

**2** Maximum Resync

**3** Broadcast (Output) Timecode \_\_\_\_\_

Broadcast Timecode

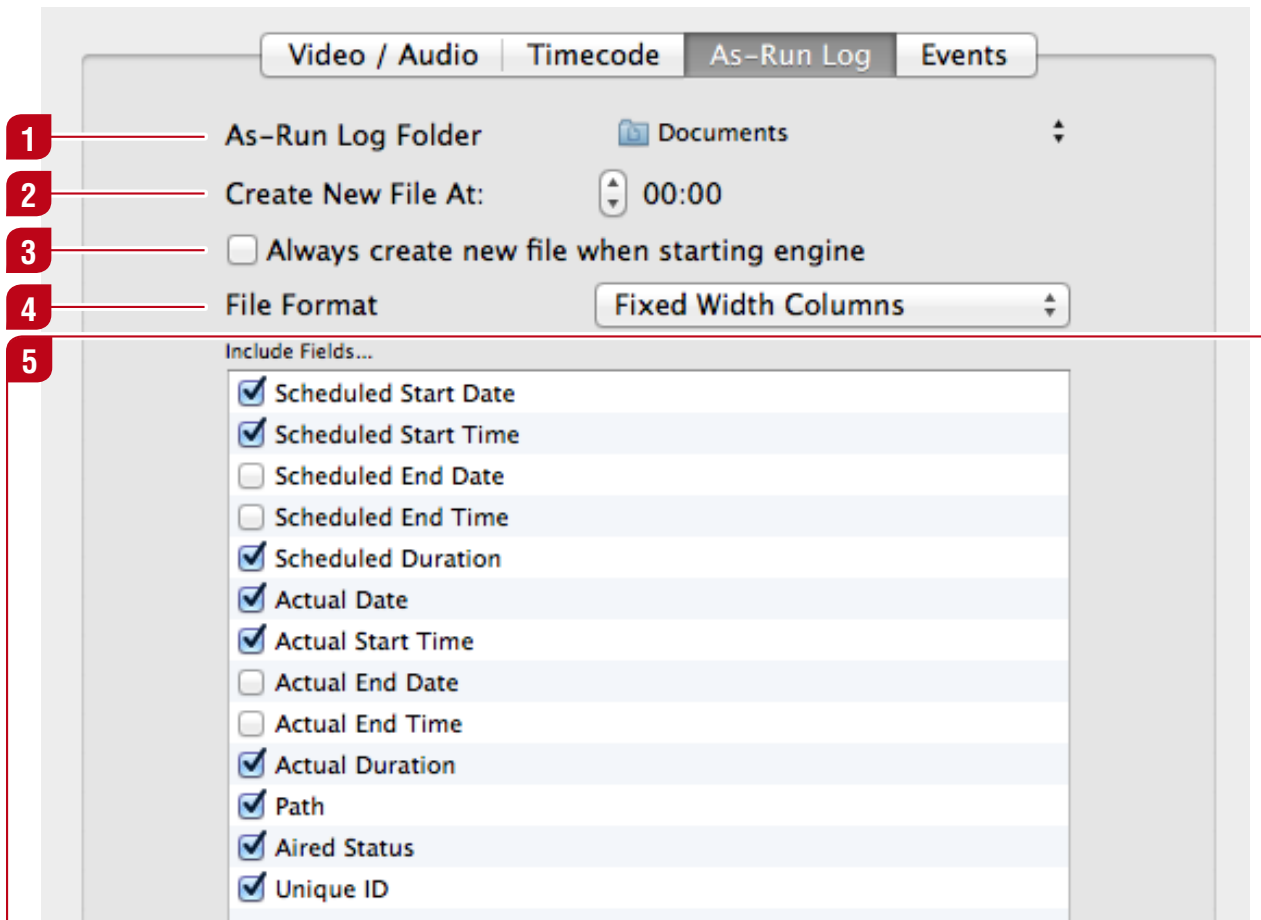
MIDI Device

- 1 Timecode Source**  
Here you can define where just:out takes the master timecode from. The "Synchronize master timecode" function has currently no function when using just:live.
- 2 Maximum Resync**  
This function has currently no function when using just:live. This function will be activated with a later version.
- 3 Broadcast (Output) Timecode**  
Using a MTC device and one of Punchlights timecode displays you can show the current/elapsed or remaining time (<http://www.punchlight.com/?q=products>).

**Note**

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## AS-RUN LOG CONFIGURATION



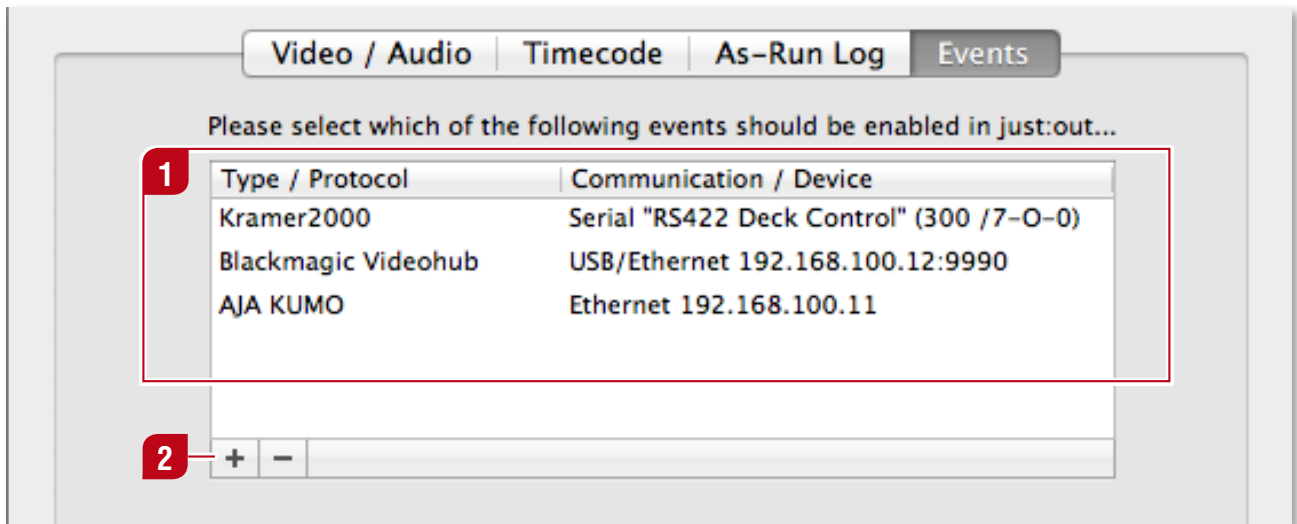
- 1 As-Run Log Folder**  
If desired just:out can write a log file from the playout to a predefined location.
- 2 Create New File At**  
Defines the timepoint where a new log file is being created.
- 3 Always create new file when starting engine**  
It is possible to generate a new log every time just:out is restarted.
- 4 File Format**  
The log is saved in UTF-8 encoding. This means that all Unicode characters are logged properly. Additionally it is possible to save the log as CSV for easy billing system integration.
- 5 Include Fields**  
The log file will contain all fields selected in this list.

**Note**

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## EVENTS (CONFIGURING GPI AND ROUTER DEVICES)

Here you can define the hardware devices which should be controlled from the just:out configured by this preference pane to control the device. It is possible to add an unlimited number of devices which then can be controlled from within just:live.



**1 Event List**  
Lists all events which will be enabled in just:out.

**2 Add/Remove Event**  
Add or remove an event by clicking the **+** or **-** button.



### Note

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## EVENTS: ADDING A NEW EVENT

Depending on the device you can use serial connection, a MOXA ethernet to serial device or an ethernet based connection to control the device.

### 1 Type/Protocol

Select the desired type of router here. Some routers – although using the same protocol – are from different manufacturers. Make sure you select a protocol here which is supported by your router. If you are unsure about which protocol to use, ask the manufacturer or send a request to our support system. If the selected type of device supports only a certain connection method, we predefine this connection as much as we can.

### 2 Serial

Select and configure a serial connection. Check the user manual of your router to find more information about the needed settings. If you are unsure about which settings to use, ask the manufacturer of the hardware device.

### 3 MOXA

Configures a MOXA connection. We have tested the MOXA NPort 5650 successfully with several hardware devices. This box is able to send IP based commands, where the hardware device itself only supports a serial port. Such a box can be very useful in case you want to control the same hardware using several just:out instances connected via Ethernet.

### 4 Ethernet

Configures an ethernet connection. If your device supports network communication, configure the ethernet connection here. This method is preferred and should be used whenever possible. If a device supports only a certain setting, we predefine this setting as much as we can.

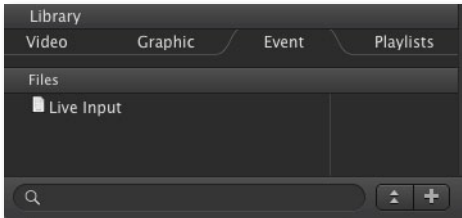


### Note

You must restart just:out for any changes to take effect. Restarting just:out will stop the final output temporarily.

## EVENTS: BUILDING GPI/ROUTER CONTROL EVENTS IN JUST:LIVE

In the previous chapter you have configured the hardware which will be used by just:live events. In the just:live user interface you can create new GPI/router presets which can later be used by a just:live operator/user.



Open the events control window by clicking on the "+" in the lower right corner of the "Events" tab in the library.

**1** 1. Load preferences To create new device events, you must first load the preferences from just:out.

Locate the file "com.toolsonair.compositionrenderer.plist" on the system running just:out by opening the "Just Out" System Preferences pane and clicking on the "Reveal Preferences File In Finder" button at the bottom of the panel. This will open a Finder window with the file selected. You may need to copy this file to this system.

**2** 2. Name the preset The preset name will appear in the "Event" tab in the library:

**3** 3. Add events A preset can consist of one or more events. For example, a preset can switch several outputs on a video router, or send one or more GPI events, or even combine video router and GPI events in a single preset.

**4** 4. Create preset When you have added all events to the preset, click "Create Preset" to create the preset which will automatically appear in the "Events" tab in the library. You can then drag and drop the preset.

**5** 5. Repeat Repeat steps 2-4 for each preset that you require. When you are finished, click "Done" below.

**6** Done

The events to be included in this preset are listed below...


Type / Protocol	Communication / Device	Event
GPI OUT - Service USB Plus	Pulse Rising Edge on GPI Out # 1	Add Event
Kramer2000 - Serial "S8000-SerialServer" (9600 / 7-O-0)	Route Input # 1 to Output # 1	Add Event
Leitch Pass-Through - Ethernet :0	Route Input # 1 to Output # 1	Add Event
Blackmagic Videohub - USB/Ethernet :0	Route Input # 1 to Output # 1	Add Event
NCB - Ethernet :0	Route Input # 1 to Output # 1	Add Event

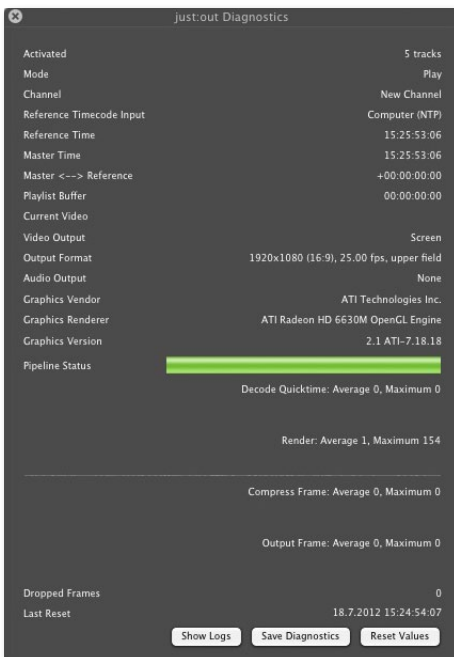
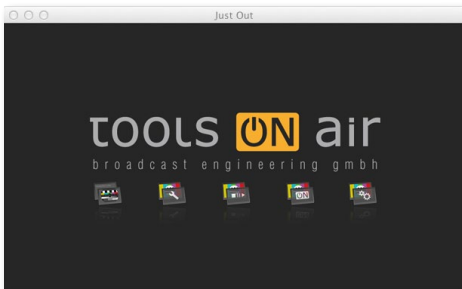
### 1 Load Preferences

Before building a new event preset you have to define which just:out you want to use to control the external device by loading the preferences from just:out. If you want to use the just:out running on the same machine click on the button "Use preferences from just:out installed on this system". If you want to control an external device using a just:out from another machine do the following steps: Locate the file "com.toolsonair.compositionrenderer.plist" on the system running just:out by opening the just:out preferences. Now click the "Reveal Preferences File in Finder" button at the bottom of the window. This will open a Finder window with the file selected. Remember this path and browse to this file after clicking on the "Browse..." button in just:live. This will activate all the events defined in just:out and will show them under point three ("Add Events").

- 2 Name The Preset**  
The preset name will appear in the "Event" tab in the library of just:live. Change the name here once you saved a preset by pressing the "Create Preset" button, otherwise you will overwrite the previously saved preset.
- 3 Add Events**  
A preset can consist of one or more events. For example, a preset can switch several outputs on a video router, or send one or more GPI events, or even combine video router and GPI events in a single preset.
- 4 Available Events**  
This is the list of available events which are depending on the selected just:out preferences file.
- 5 Create Preset**  
When you have added all events to the preset click "Create Preset" to create the preset which will automatically appear in the "Events" tab in the library of just:live. You can then use the preset(s).
- 6 Repeat**  
Repeat steps 2–4 for each preset you need. When you are finished click "Done".



If a channel has not been started automatically, press the "Play"  button in just:connect (see next chapter for more information about just:connect) to start a channel. This has to be done only once for each channel, after that a channel will be started automatically when the just:out engine(s) and just:connect have been started. The just:out diagnostics window ("Window → Diagnostics") should display "Play" and the master time should be running.



✓ Show Preview Automatically On Start  
Full-screen Preview On Start  
Preview Actual Pixels  
Save Preview Image As...

✓ Diagnostics  
✓ Preview  
Bring All to Front  
✓ Just Out

## Preview Window

To preview the final output on the computer screen you need to open the preview window. In just:out use the menu "Window → Preview". Press the maximize button to enter full screen, press the escape key to exit full screen. There is also an option to preview in actual pixels in the "Window" menu.

## just:out Diagnostics

The just:out diagnostics window shows playout statistics and information about the video output card, audio output device, graphics card vendor, graphics card model and graphics card driver version.

The diagnostics window also shows the channel name which "occupies" the engine.

In addition it shows all timecode relevant informations like the master timecode source, the master timecode (with the difference to the timecode source) as well as the amount of rundown information (in hours, minutes and seconds) just:out stores currently.

## View Menu

The "View" menu of just:out contains the "Save Image As..." command. It allows you to capture screenshots of the rendered output of just:out. In addition it allows you to define when and how the preview window should be started.

## Window Menu

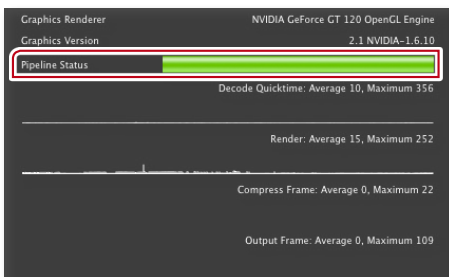
Use the "Window" menu to show or hide the different windows of just:out.

## PLAYOUT BUFFER STATUS

Depending on the configuration of the video buffer, just:out pre-reads between 1 and 3 seconds of the rundown to make sure the playout can happen without dropping frames even under bad conditions. A bad condition usually has two reasons:

- **Case 1:** The storage system is not fast enough to deliver the required data. This could happen because the disk is getting full, heavy copying of files and/or many users accessing the same storage system at the same time.
- **Case 2:** The GPU isn't able to render the content fast enough, because the current graphic is too complex for the selected graphics card.

In both cases the just:out pipeline buffer will be quickly exhausted (the buffer status shown in the diagnostics window will decrease and turn red) and eventually just:out will begin to drop video frames. We recommend that you test any graphics you intend to schedule before taking them on air to ensure that the graphics card is capable of rendering them quickly enough.



### Buffer Status

The buffer status is shown in just:out's diagnostic window as well as in the just:live user interface.

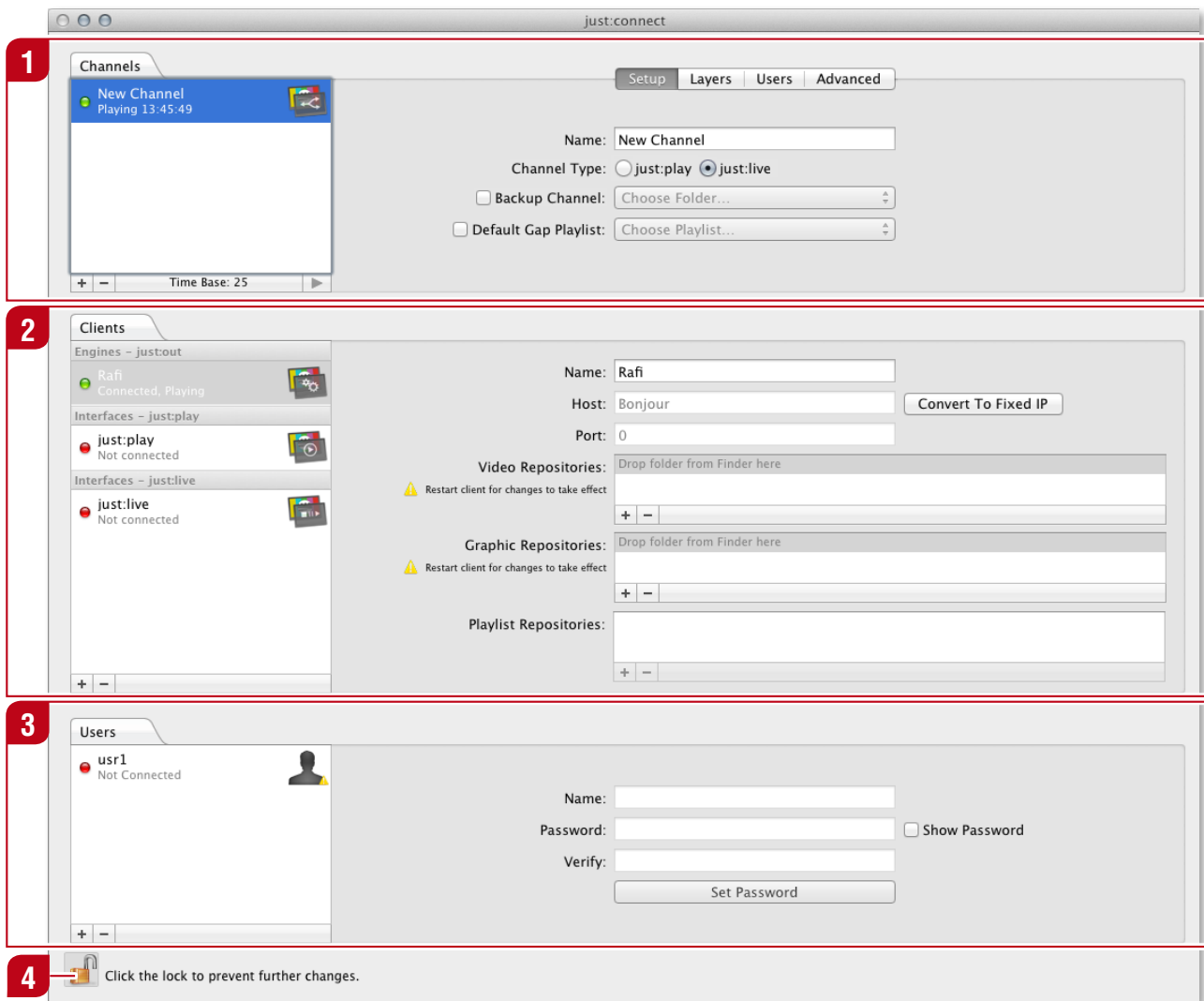
# JUST:CONNECT



just:connect acts like a database and allows you to manage channels, just:live UIs and engines. Use just:connect to create channels, define the volumes and folders on your storage system (= repository folders) the engine and the user interface look for the files, manage users but also make use of optional security functions by defining redundant playout options.

- **Channel Setup:** Setup and maintain a single or multiple channels using the same just:connect.
- **Rights Management:** Control who may connect to a channel and what rights a user has to alter a schedule. In addition you can define passwords for each user for additional security.
- **Centralized Schedule:** For each channel a single copy of the schedule is held by just:connect and sent to the clients.
- **Redundancy:** Optionally a slave just:out engine can be defined for each layer to act as a redundant playout node. In this case every change made in just:live will be sent to the master and the slave engine automatically.
- **Automatic Channel Backup:** There is a backup feature that allows you to automatically backup all of your channels to a second folder.
- **Multiple Channels:** It is possible to control a single channel but also several channels using a single just:connect.

The following pages give an overview about the three parts ("Channels", "Clients" and "Users") of the just:connect UI. You can then read the basic and advanced configuration instructions in the chapters "just:connect Basic Setup" and "just:connect Advanced Setup".

**1 Channels**

Lists all available channels. If there is no channel – or if you want to add another channel – click on the **+** button at the bottom of the "Channels" tab to create a new channel. Selecting a channel allows you to change the settings of this channel which can be found in the tabs on the right of the channel list.

**2 Clients**

Lists all available clients and allows you to add/delete engines and interfaces. Selecting a client allows you to change the name of the client, all network related settings and the media folders used by the client.

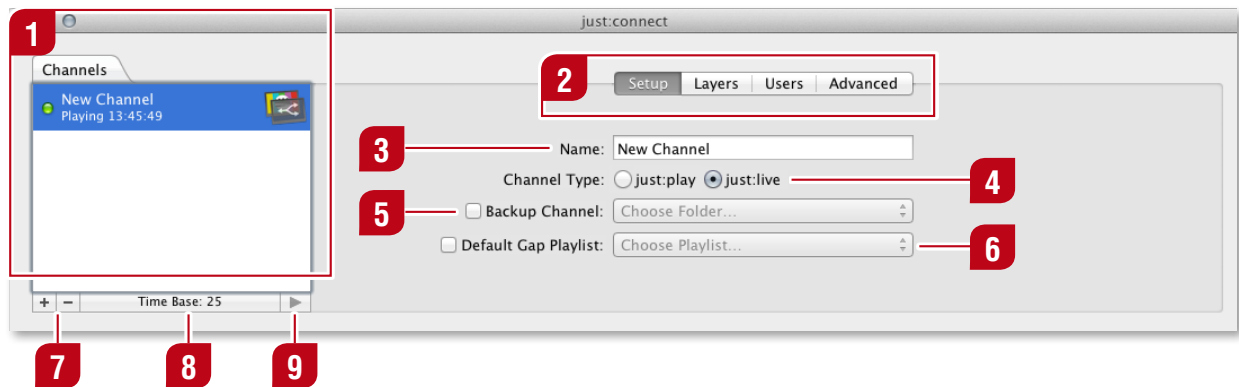
**3 Users**

Lists all available users and allows you to add/delete users to/from a channel. Selecting a user allows you to add/change/delete the password of this user.

**4 Lock**

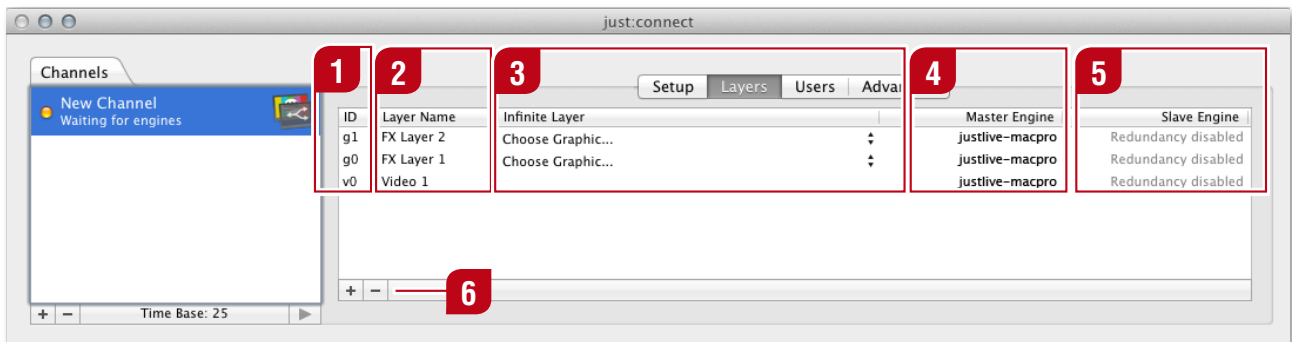
To make changes you must unlock the application first by clicking on the lock icon at the bottom of the window, then enter the administrator credentials of the machine.


## USER INTERFACE: CHANNELS – SETUP



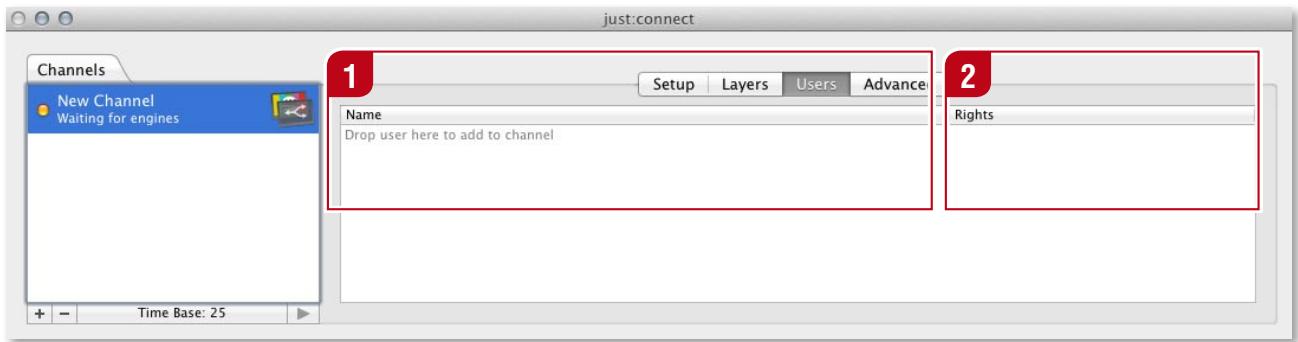
- 1 Channels List**  
List of all channels administered by this just:connect.
- 2 Setup, Layers, Users and Advanced Tabs**  
Switch between different tabs to configure a channel.
- 3 Name**  
Set the name of the currently selected channel in this field. Also make sure that channels on the same network are not using the same name (for example when using multiple instances of just:connect). You must restart just:out when you change the name of the channel.
- 4 Channel Type**  
Select whether the channel is being used with just:live or with just:live. Select just:live here. You must restart just:out after changing the channel type.
- 5 Backup Channel**  
If required define a folder here which will be used to backup the channel file which can be used to restore the channel on another machine. Do not select an internal disk as the backup volume but an external/network connected volume so in case the internal disk fails only the original channel file is lost and not the backup.
- 6 Default Gap Playlist**  
This function is only usable with just:play.
- 7 "Add" and "Remove" Channel Buttons**  
Used to add or remove a channel. Channel deletion cannot be undone.
- 8 Time Base**  
The time base must be the same for all channels administered by this just:connect.
- 9 "Play" Button**  
Press this button to start the selected channel. This has to be done only once for each channel, after that a channel will be started automatically when the engine(s) and just:connect have been started.

## USER INTERFACE: CHANNELS – LAYERS

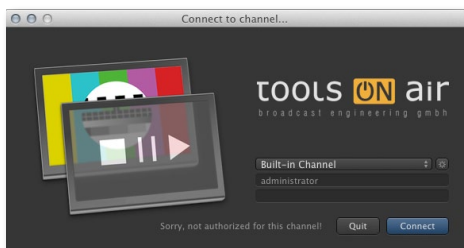


- 1 ID**  
Unique ID, used to identify a layer.
- 2 Layer Name**  
Name of a layer. Double click the name to change it. The layer names will be displayed in the just:live UI. Use less than five characters for the layer name, otherwise the name will be shortened in the just:live UI.
- 3 Infinite Layer**  
When selecting a layer in just:connect as being infinite you also specify a Quartz Composer composition, Composition Builder composition or an image file (JPEG or PNG) that should be permanently played on the layer. For example you might select a station ID or corner logo graphic to be "always" or "infinitely" played on the layer. Once selected as infinite, the layer will be "locked" and just:live indicates that a graphic file is always being played on this layer.
- 4 Master Engine**  
Select a master engine for each layer you want to use with this channel otherwise the layer will not be active. By default just:live comes with one video and two FX layers which can be upgraded to any number of layers, depending on the power of your host machine and the speed of the disks. To delete an unused layer, select it and press the  button. Adding a just:out engine to a layer is explained later.
- 5 Slave Engine**  
If there are two engines on two different machines available they can be configured as master and slave which means that the information from just:connect will be send to both engines and therefore the two engines are playing the same content synchronized all the time. Activate the redundancy option, otherwise you will not be able to drop an engine into the Slave Engine area.
- 6 Add/Remove Layer**  
Used to add or remove a layer from the selected channel. To add or remove a layer you must stop the channel first by quitting just:out, which will stop the playout.

## USER INTERFACE: CHANNELS – USERS



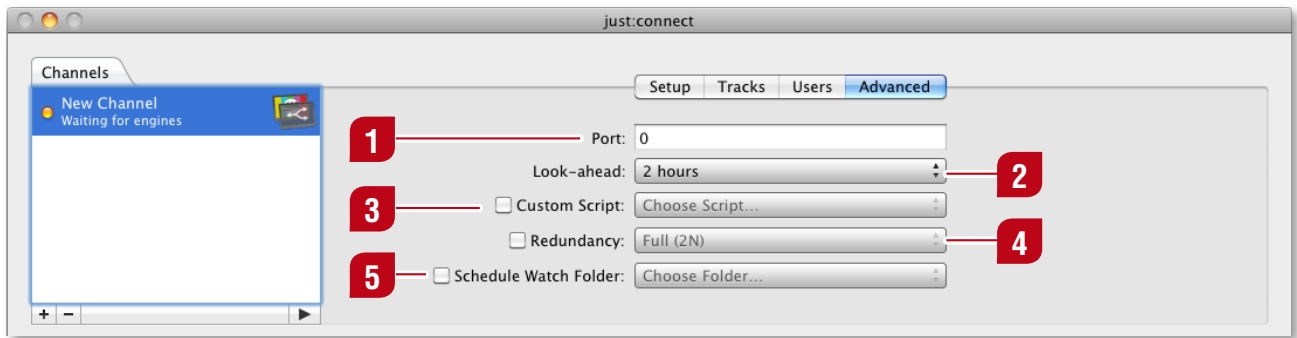
- 1 Name**  
Lists all users which should be able to access the selected channel.
- 2 Rights**  
Displays the rights (permissions) of each user.



After starting just:live, the user will be asked to enter a username and password.

If the user is not part of the selected channel, the error message "Sorry, not authorized for this channel!" appears. Please go back to the "Clients" tab in just:connect and re-check the spelling of the users defined for the channel.

## USER INTERFACE: CHANNELS – ADVANCED



- 1 Port**

To give the channel a unique identifier you must type in a number in the "Port" text field which represents the port used by this channel. The port must be between 1 and 65535 and it must be unused in your network. Make sure that this port is not closed on any router/firewall used between just:connect and the interface client. Note that each channel must have a different port number assigned. Using the same port number for two channels will result in an error. Set the port to "0" for automatic port selection.
- 2 Look-ahead**

This is the length of the playout which will be transmitted to just:out as a minimum. Make sure that this time is longer than the longest live events/QuickTime movies you are going to play out. Because of the nature of just:live and the situations it is used for, the "Look-ahead" time is usually not used when using just:live, so we recommend to define one hour when using just:live.
- 3 Custom Script**

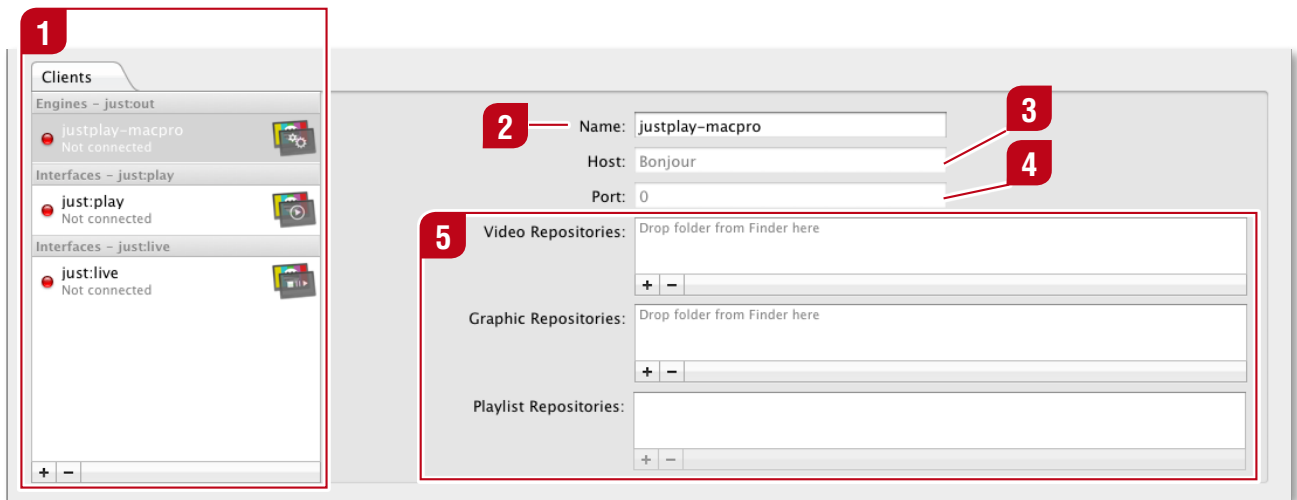
This function allows you to select a JavaScript which then will be used to parse custom playlists received via TCP/IP into our own XML playlist format. Please contact ToolsOnAir for more information.
- 4 Redundancy**

When using redundancy you may choose between "Full (2N)" and "Flexible (N+1)" (formerly called "Floating Slave Engine"). In 2N redundancy, you have master and slave engines running all the time, so for every master engine you need a slave engine. In N+1 redundancy you can share a single redundant engine between several channels. If the master engine for any given channel stops sending "heartbeats" to just:connect then the floating slave engine will be started for the channel. Obviously, in this scenario only one redundant engine is available and it will be allocated on a first-come-first-served basis, so if a second master engine fails, no backup slave engine would be available.
- 5 Schedule Watch Folder**

This function is only to be used with just:play.



## USER INTERFACE: CLIENTS



- 1 Clients List**  
Lists all engine and interface clients.
- 2 Name**  
Sets the name of the currently selected engine/interface.
- 3 Host**  
Sets the host of the selected client. If the client runs on the same machine as just:connect this field is set to "localhost". If a client is discovered via Bonjour, the "Host" field is set to "Bonjour".
- 4 Port**  
Set a port for the client. When the port is set to "0", it is selected automatically.
- 5 Repository Folders**  
The repositories define the paths to movie, graphic and playlist (UI clients only) files which a client can use. You can set multiple paths which can point to local disks as well as to remote locations like SANs and file servers. The repository paths will show up in the library of the client.



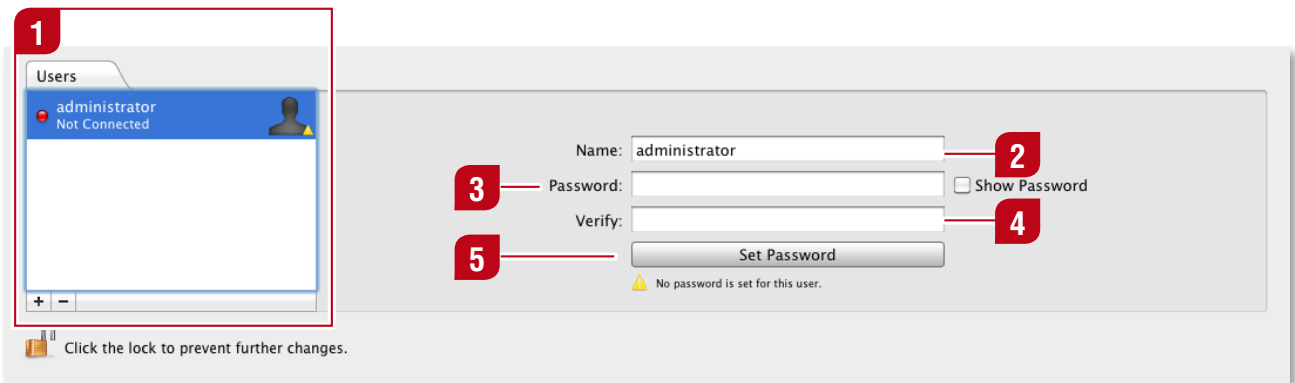
### Attention

Please make sure that folders with the same content are set for the same repository folders for the engine and the interface client, otherwise you will not be able to see all files available for this channel. Failing to use the same path for engine clients (just:out) and interface clients (just:live) could result in scheduled files not playing out!



### Invalid Repository

In case a repository folder defined for an interface client is not available any more, a warning notifying you that the repository has been deleted from the library will be displayed.

**USER INTERFACE: USERS**

- 1 Users List**  
Lists users. Add or remove a user by clicking the  or  button.
- 2 Name**  
Sets the name of the currently selected user.
- 3 Password**  
Type a password for the user in this field. If you want to see the password in clear text, activate the "Show Password" checkbox.
- 4 Verify**  
Verify the password for the user in this field.
- 5 Set Password**  
Press this button after you have entered and verified the password.

# JUST:CONNECT BASIC SETUP

Following the setup variants described earlier in this document, you will have one or several just:connect instances available in your system. If the playout is distributed, install just:connect on the machine that will control the channel(s). If you use only one machine for the playout, install just:out, just:connect and just:live on that single machine.

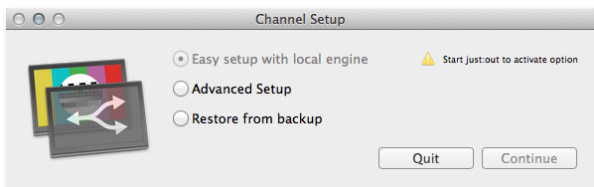
When starting just:connect for the first time you can choose between three options: Easy setup, advanced setup or restoring from backup.

## 10.1

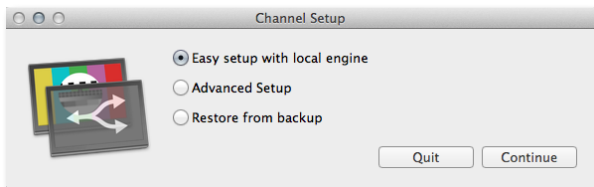
## JUST:CONNECT BASIC SETUP

## OPTION A: EASY SETUP WITH LOCAL ENGINE

We recommend all administrators not familiar with the advanced setup procedure to use this option.



The setup window detects if there is a just:out started and displays a warning if this is not the case, so this option is not available if you have not started just:out.



Select this option and just:connect will make a new channel automatically by using the video related settings of the just:out running on the same machine and by assigning the same just:out to the channel automatically.



Another window will be displayed which prompts you to choose the type of channel you would like to use. Select "just:live". This will allow only users using a just:live UI to connect to this channel. Click "Continue" to start just:connect which automatically creates a channel called "New Channel" with the local just:out assigned to that channel.

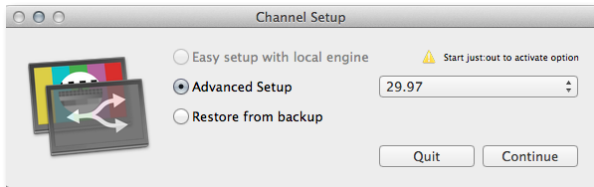
Using the "Easy setup with local engine" option, the "Movies" and "Pictures" folders in the home directory of the active user will be selected as the default repositories. Copy the video and graphic files you want to use into those folders so they are available for playout, or define new repository folders. In addition you can define users with certain user rights and add them to the channel (like described in the following chapters).

## 10.2

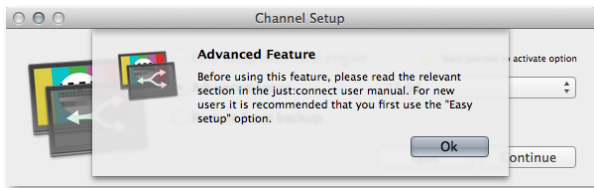
### JUST:CONNECT BASIC SETUP

## OPTION B: ADVANCED SETUP

We recommend this option only for administrators with a deep technical understanding of the TOA system because the engines have to be assigned to a channel manually.



Select "Advanced Setup" and define the timebase (i.e. fps) you would like to use, then click on the "Continue" button.



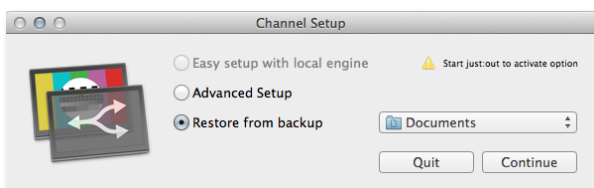
Another window will be displayed which prompts you to choose the type of channel you would like to use. Select "just:live". This will allow only users using a just:live UI to connect to this channel.

Click "Continue" to start just:connect which automatically creates a channel called "New Channel". Assign the just:out engine client to the channel and define the volumes and folders which should be used as repositories for videos, graphics and playlist files. Define users with certain user rights and add them to the channel like described in the following chapters.

## 10.3

### JUST:CONNECT BASIC SETUP

## OPTION C: RESTORE FROM BACKUP



If you have reinstalled just:connect after a drive failure and you have backup channels available, select the folder containing your backups to restore the channels. To do so, copy the folder with the channel backup to the machine so you can select it here. Once you made your selection, click on "Continue" to start just:connect.

The channel will be restored and just:connect starts, sending the schedule information to just:out.



## Channel Selection

After starting just:live the user will be asked to select a channel created in just:connect before.



### Note

Channels are stored in "/Library/Application Support/ToolsOnAir". just:connect automatically saves and loads channels from this location. The channel files also contain the schedules.

# JUST:CONNECT ADVANCED SETUP

The just:connect advanced setup covers the process of configuring a just:connect exactly for a channel's needs. This table of contents gives you an overview what parts of configuration will be described.

## Channels

Adding a New Channel	50
Enabling a Channel to be Accessed by a UI on Another Network	50
Changing the Name of a Channel	51
Using an Infinite Graphic on a Certain Layer	51
Add Engine as Master/Slave Engine to a Channel	52
Change Engine Assigned as Master/Slave for a Channel	53
Add New User to Channel & User Rights Change	53
Deleting a Channel From the Channels List	53

## Clients

Add Engine Client Which is not in the Same Network	54
Add/Change/Delete Repository Paths of Engine Clients	54
Deleting an Engine Client	55
Adding an Interface Client	55
Add/Change/Remove Repository Paths of UI Client	55
Change Repository of UI Client to be Available for Single Channel	56
Deleting an Interface Client	57

## Users

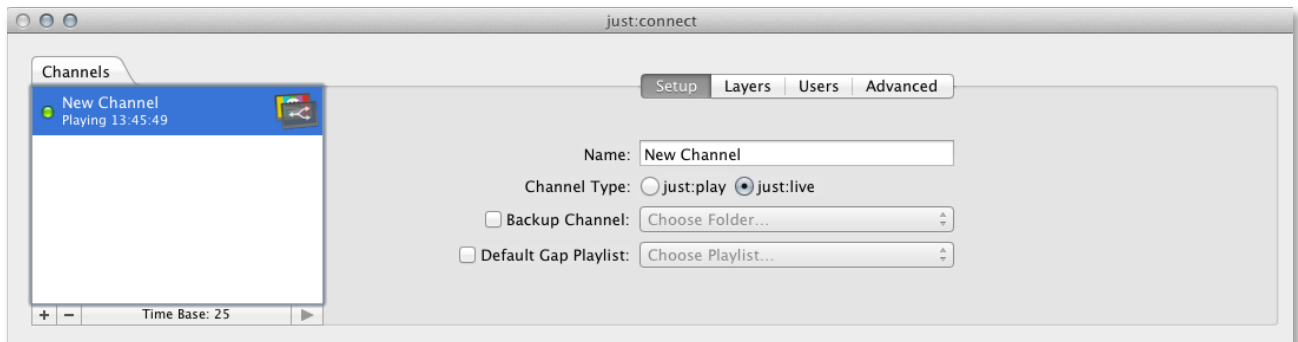
Assigning Clients & Users	57
Adding a User to the Users List	58
Add/Change/Remove the Name/Password of a User	58
Deleting a User	58

## 11.1

JUST:CONNECT ADVANCED SETUP

**CHANNELS – ADDING A NEW CHANNEL**

Click on the **+** button at the bottom of the "Channels" list. This will create a new channel which needs to be configured as described on the following pages.

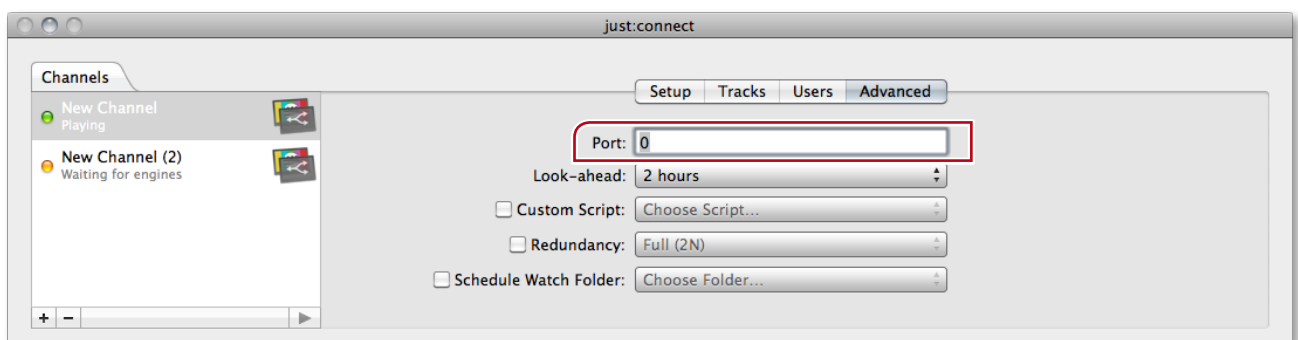


## 11.2

JUST:CONNECT ADVANCED SETUP

**CHANNELS – ENABLING A CHANNEL TO BE ACCESSED BY A UI ON ANOTHER NETWORK**

Click on the **+** button at the bottom of the "Channels" list. This will create a new channel which needs to be configured as described on the following pages. In the "Channels" list select the channel. Now click on the "Advanced" tab on the right of the "Channels" list.



Chapter 12.1 ("Connecting to a Channel Which is Administrated by a just:connect on Another Network") explains how to connect to a channel which is administrated by a just:connect on another network.

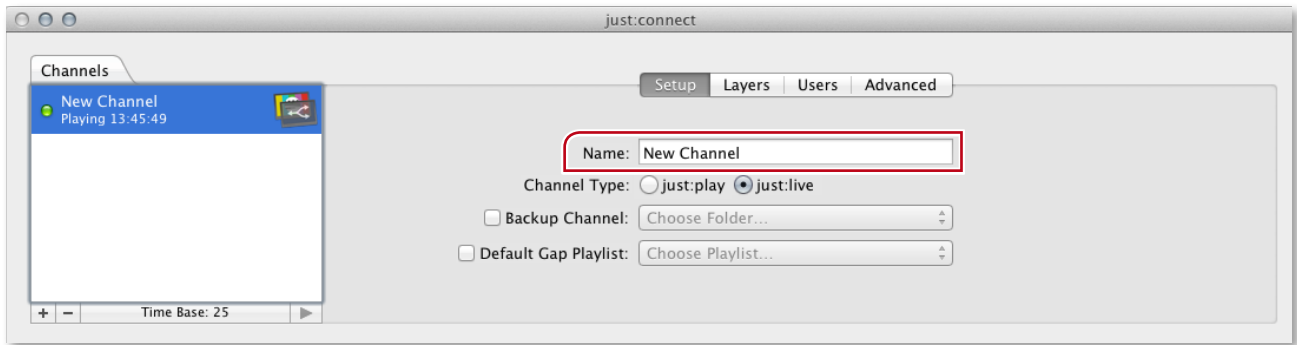
To give the channel a unique identifier you must type in a number in the "Port" text field which represents the port used by this channel. The port must be between 1 and 65535 and it must be unused in your network. Make sure that this port is not closed on any router/firewall used between just:connect and the interface client(s). Note that each channel must have a different port number assigned. Using the same port number for two channels will result in an error.

## 11.3

JUST:CONNECT ADVANCED SETUP

**CHANNELS – CHANGING THE NAME OF A CHANNEL**

Select the channel in the "Channels" list. Now click on the "Setup" tab. Select the content of the "Name" text field, type in the channel name and press the return key. To reflect the change you must restart every engine and client (just:out and just:live) currently connected to this channel.

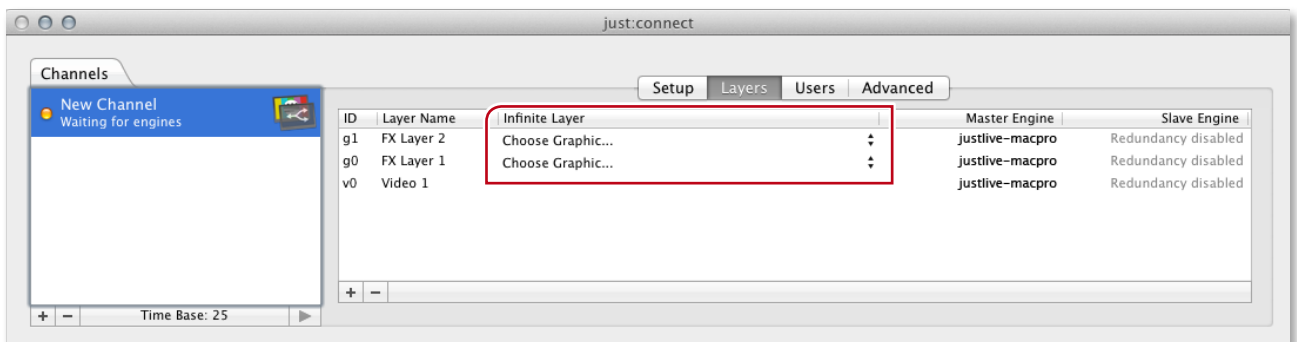


## 11.4

JUST:CONNECT ADVANCED SETUP

**CHANNELS – USING AN INFINITE GRAPHIC ON A CERTAIN LAYER**

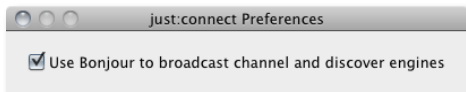
To use a graphic which should be on air all the time on a certain layer, select the channel in the "Channels" list. Now click on the "Layers" tab. In the table which is now visible you can find a column called "Infinite Layer". In this column click on the "Choose Graphic..." text of the layer you want to load the graphics onto (FX Layer 1, FX Layer 2...). This opens the Finder file chooser window which allows you to select the graphic file you want to have on air all the time. This can be a Quartz Composition, a Composition Builder or an image (JPEG or PNG) file.





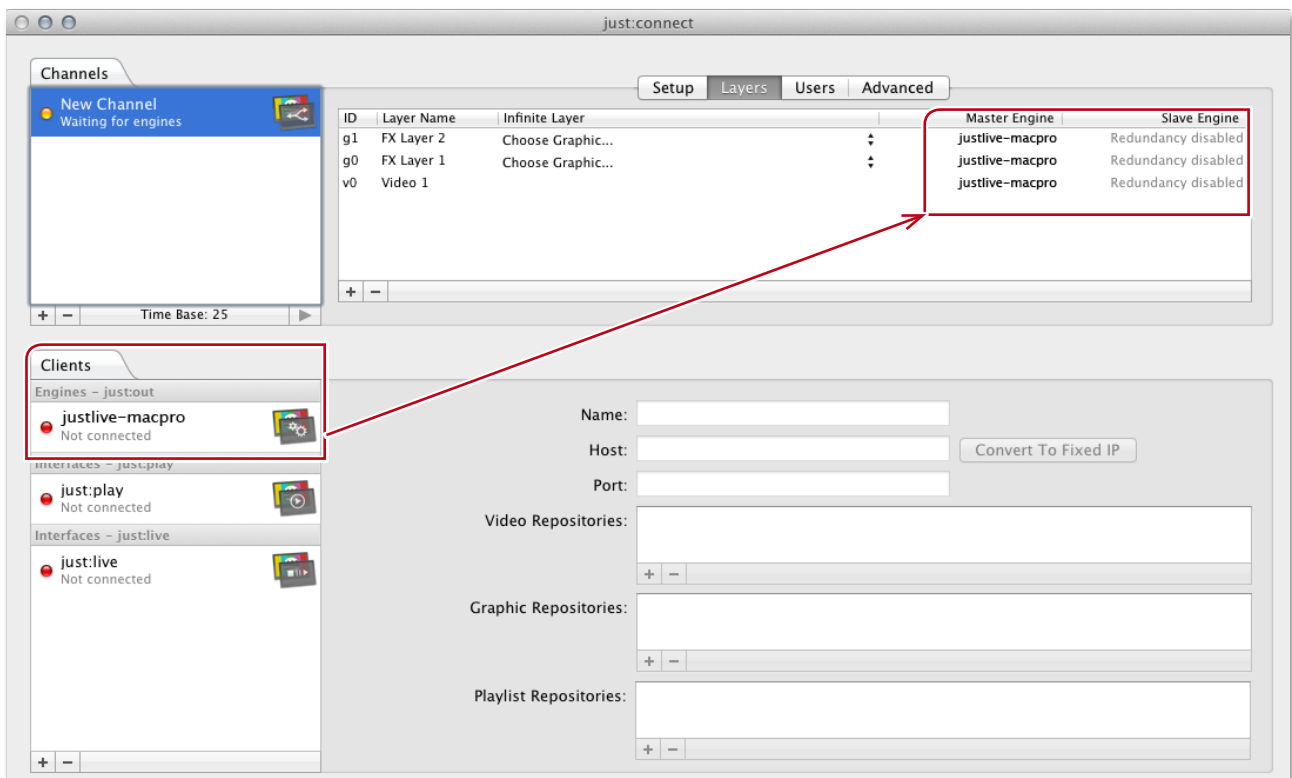
## CHANNELS – ADD ENGINE AS MASTER/SLAVE ENGINE TO A CHANNEL

To add an engine client as the master or slave engine to a channel, look at the "Clients" list. The first headline is called "Engines - just:out" and shows engine clients available throughout the network. If you cannot see the just:out engine you wish to use in this list although it is in the same network, please ensure that just:out is started on the specific machine and also make sure that "Use Bonjour to broadcast channel and discover engines" is activated in the preferences of just:connect. You can find them under the "Just Connect" menu or by pressing "command + comma".



Once you see the just:out engine you want to use listed in the "Clients" tab, select the channel in the "Channels" list and click on the "Layers" tab. You should see two columns labeled "Master Engine" and "Slave Engine". Drag the just:out engine from the "Clients" list and drop it onto the layer you want to use the engine for (e.g. "Video 1" or "FX Layer 1").

Do this either in the "Master Engine" column to use just:out as the layer's master engine or in the "Slave Engine" column to use just:out as the layer's slave engine. Repeat this drag and drop procedure for all layers you want this just:out to be responsible for. You can hold down the "command" key while dropping an engine to automatically assign the just:out engine as the master/slave engine for all of the channel's layers. Please keep in mind that one just:out can only be assigned to one channel and only as either master or slave, not both.



## 11.6

JUST:CONNECT ADVANCED SETUP

**CHANNELS – CHANGE ENGINE ASSIGNED AS MASTER/SLAVE FOR A CHANNEL**

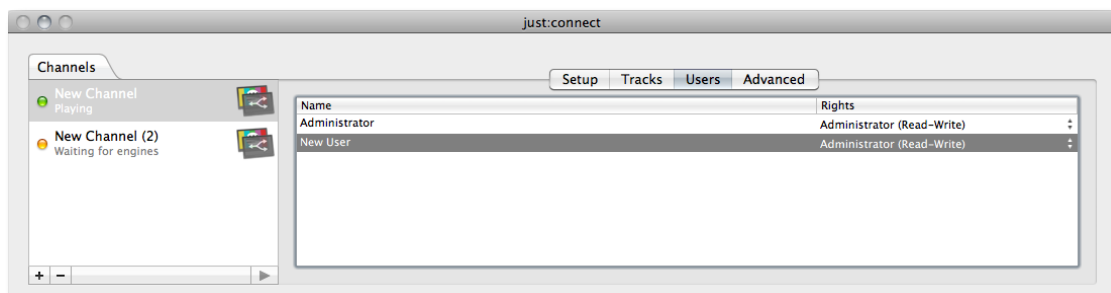
To change the engine client assigned as master or slave engine for a channel, you must first delete the engine client from the list of "Engines - just:out" in the "Clients" tab. This will remove the engine from any layers/channel(s) to which it was assigned. You must restart the removed engine client to make it available again in just:connect. Then you can use it with another channel by dragging and dropping it as described in the previous chapter.

## 11.7

JUST:CONNECT ADVANCED SETUP

**CHANNELS – ADD NEW USER TO CHANNEL & USER RIGHTS CHANGE**

Create a new user as described in the "Users" chapters. Supply a user name and optionally set a password for the user. Once you have done this select a channel in the "Channels" list. Click on the "Users" tab and you will see a table listing the users currently able to access the channel.




You can now drag a user from the "Users" area and drop it onto this table. You can add as many users to a channel as you want. To change the user rights click on an entry in the "Rights" column and select the desired permissions for the user.

The options are "Administrator (Read-Write)" for users that can modify a channel's schedule (i.e. add, delete and modify playlists) and "User (Read-only)" for read-only access (i.e. the user can view the channel's schedule but is not allowed to make any changes). You can also delete a user from a channel to prevent further access to a channel.


## 11.8

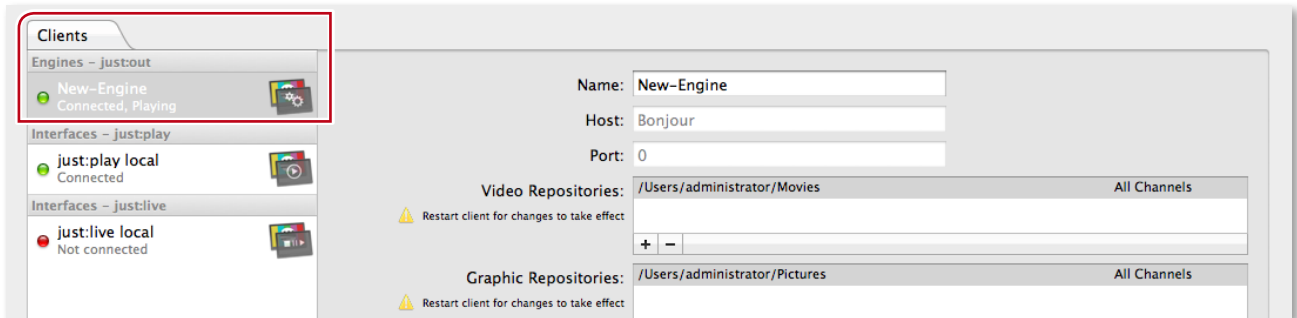
JUST:CONNECT ADVANCED SETUP

**CHANNELS – DELETING A CHANNEL FROM THE CHANNELS LIST**

Select the channel in the "Channels" list. Then click the  button at the bottom of the list or press the delete key on your keyboard. Accept the warning by clicking on the Remove button to delete the channel immediately. Keep in mind that this action cannot be undone.

## CLIENTS – ADD ENGINE CLIENT WHICH IS NOT IN THE SAME NETWORK


Click on the  button below the "Clients" list and select "Add just:out engine" from the list of options. This will add a new just:out engine client called "just:out" to the list of clients under the heading "Engines - just:out". Click on the just:out engine client to select it. Double click on the engine's name which you can find under the attributes shown to the right of the client list and type in a new name. This will allow you to identify the engine easily later. After that type in the IP address and the port (defined in the just:out preferences) of the machine that just:out is running on. Now you must define the repository folders which must be the same for all of a channel's clients.



### Attention

Failing to use the same path for engine clients (just:out) and interface clients could result in scheduled files not playing out.

## CLIENTS – ADD/CHANGE/DELETE REPOSITORY PATHS OF ENGINE CLIENTS


Select the engine in the "Clients" list. Now you can see the repository tables shown in the attributes to the right of the "Clients" list. Click the  button at the bottom of the relevant repository table (i.e. video, graphic or playlist repository) to add a new repository folder.

You can also add a new repository folder by dragging a folder from Finder and dropping it onto one of the repository tables. To change the path of a repository folder double click on the path in the table and type in a new one. You can only define video and graphic repositories for an engine client. The playlist repository folder table is disabled for just:out engine clients.

## 11.11

JUST:CONNECT ADVANCED SETUP


**CLIENTS – DELETING AN ENGINE CLIENT**

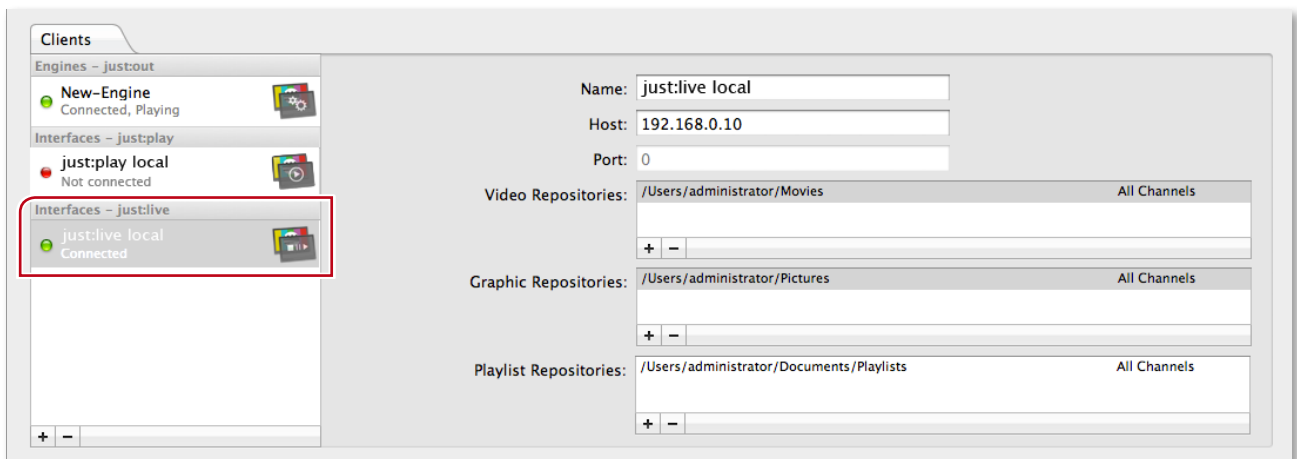
Select the engine in the "Clients" list. Click on the  button at the bottom of the list or press the delete key on your keyboard. Accept the warning by clicking on the "Remove" button to delete the engine client immediately. Keep in mind that this action can not be undone! An engine client that broadcasts its service over Bonjour will be automatically added to the "Engines - just:out" client list as soon as just:out has been restarted.

## 11.12

JUST:CONNECT ADVANCED SETUP

**CLIENTS – ADDING AN INTERFACE CLIENT**

To connect to a channel using just:live you must first add an interface client in just:connect for each machine running just:live. This is done by clicking the  button below the "Clients" list. Select "Add just:live client" from the list of options. This will add a new interface client.


**Attention**

Select the new interface. You should change the name of the client which will allow you to identify the client easily later. After that type in the IP address of the machine running the interface client as well as the repository folders which should be the same for all engine and interface client using the given channel. Failing to do so could result in scheduled files not playing out!

## 11.13

JUST:CONNECT ADVANCED SETUP

**CLIENTS – ADD/CHANGE/REMOVE REPOSITORY PATHS OF UI CLIENT**

Select the engine client in the "Clients" list. Now you can see the repository tables shown in the attributes to the right of the "Clients" list. Click on the  button at the bottom of the relevant repository table (i.e. video, graphic or playlist repository) to add a new repository folder.

You can also add a new repository folder by dragging a folder from the Finder and dropping it onto one of the repository tables. To change the path of a repository folder double click on the path in the table. You can define video, graphic and playlist repositories for an interface client.

In some cases (especially when using the same names for volumes on different machines) it is hard to figure out the right name of the path. In such situations it may be useful to define the repository folder directly in the UI. To do so start just:live on the client's machine and select "Add Repository Folder" under the "File" menu. There you can choose which kind of repository folder you want to generate automatically for this channel in just:connect.

## 11.14

### JUST:CONNECT ADVANCED SETUP

## CLIENTS – CHANGE REPOSITORY OF UI CLIENT TO BE AVAILABLE FOR SINGLE CHANNEL

To change the repository path of an UI client to be available for a single channel (instead of all channels), select the engine client in the "Clients" list. Now you can see the repository tables shown in the attributes to the right of the "Clients" list. To add a repository folder to the interface client please refer to the chapter "Adding/Changing/Deleting the Repository Paths of an Engine Client". Once a new repository folder has been added, it is automatically available for all channels accessed by this client.

Drag and drop a channel from the "Channels" list onto all channels of the repository folder to make this folder only available for the selected channel.

The screenshot shows the 'Channels' and 'Clients' sections of the Just:Connect Advanced Setup interface. In the 'Channels' section, a 'New Channel' is highlighted with a red box. In the 'Clients' section, the 'just:live local' client is selected. The 'Video Repositories' table for this client shows a dropdown menu set to 'All Channels', with a red arrow pointing to it from the highlighted channel in the Channels list.


ID	Track Name	Infinite Track	Master Engine	Slave Engine
g3	Graphic 4	Choose Graphic...	Drop just:out client here	Redundancy disabled
g4	Graphic 3	Choose Graphic...	Drop just:out client here	Redundancy disabled
g1	Graphic 2	Choose Graphic...	Drop just:out client here	Redundancy disabled
g0	Graphic 1	Choose Graphic...	Drop just:out client here	Redundancy disabled
v0	Video 1		Drop just:out client here	Redundancy disabled

Client	Name	Host	Port	Video Repositories	Graphic Repositories
just:live local	just:live local	192.168.0.10	0	/Users/administrator/Movies All Channels	/Users/administrator/Pictures All Channels

## 11.15

JUST:CONNECT ADVANCED SETUP

### CLIENTS – DELETING AN INTERFACE CLIENT

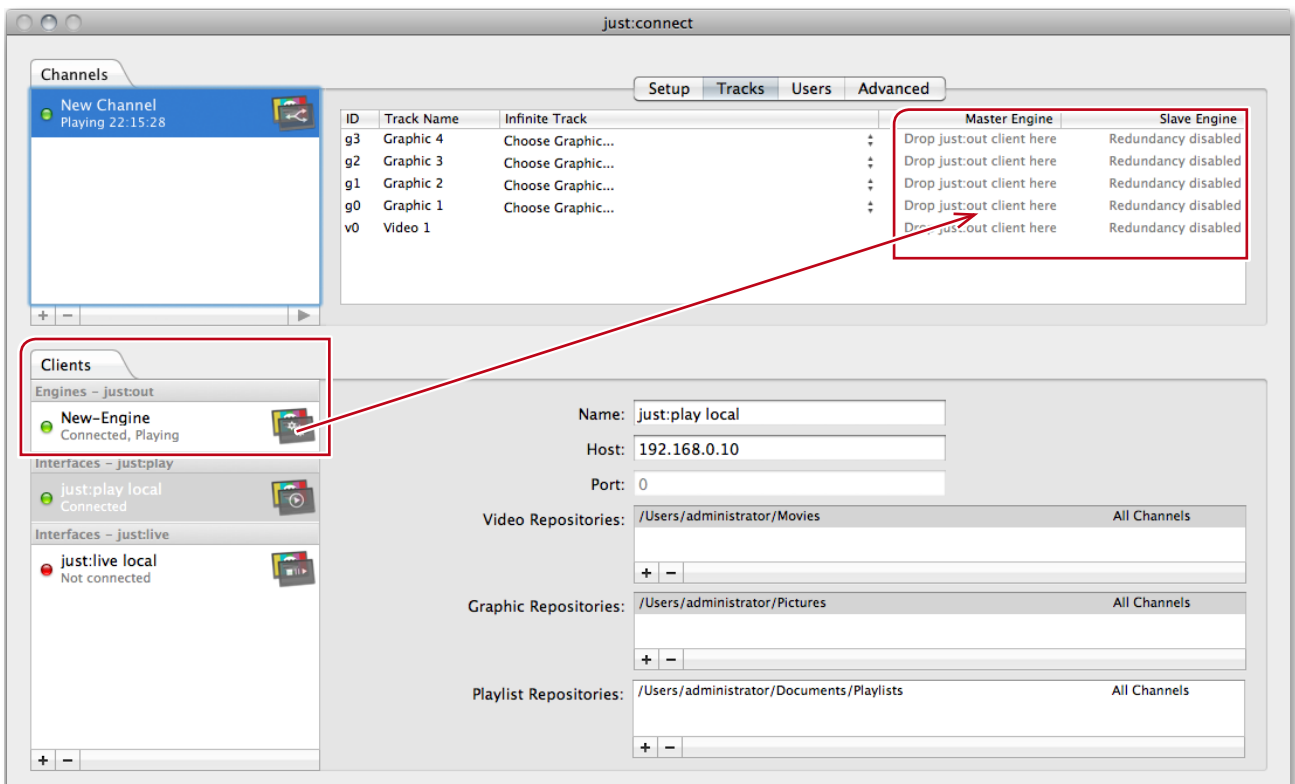
Select the interface client in the "Clients" list to select it. Click on the  button at the bottom of the list or press the delete key on your keyboard. Accept the warning by clicking on the "Remove" button to delete the interface client immediately. This action can not be undone.

## 11.16

JUST:CONNECT ADVANCED SETUP

### USERS – ASSIGNING CLIENTS & USERS

When you are done with configuring the clients and users you can assign them to a channel. Drag and drop the clients and users of your choice onto the appropriate sections. The following figure is an example of how this procedure works with an engine client.

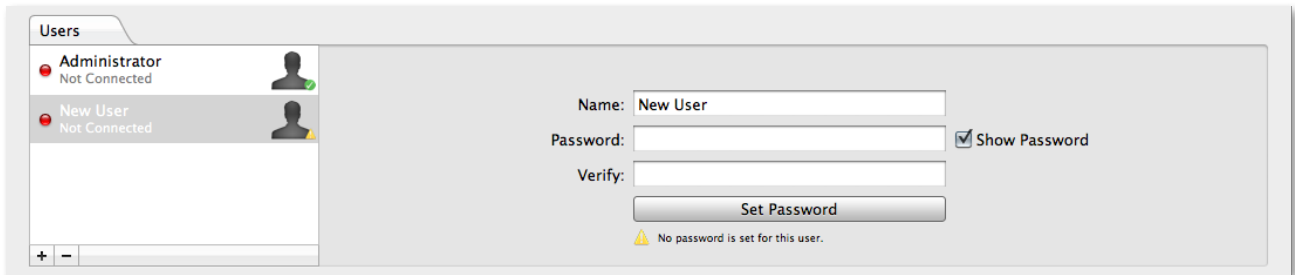


## 11.17

JUST:CONNECT ADVANCED SETUP

**USERS – ADDING A USER TO THE USERS LIST**

To add a user to the "Users" list available to be added to a channel, click on the  button at the bottom of the "Users" list. This will add a user called "New User" which should be configured as described in the previous pages.



The screenshot shows a web interface for user management. On the left, there is a 'Users' list with two entries: 'Administrator' and 'New User', both with a 'Not Connected' status. To the right of the list is a form for adding or editing a user. The form has three input fields: 'Name' (containing 'New User'), 'Password', and 'Verify'. A 'Show Password' checkbox is checked. Below the fields is a 'Set Password' button. At the bottom of the form, there is a warning icon and the text 'No password is set for this user.'

## 11.18

JUST:CONNECT ADVANCED SETUP


**USERS – ADD/CHANGE/REMOVE THE NAME/PASSWORD OF A USER**

Click on the user in the "Users" list to select it. Double-click on the user's name which you can find in the attributes shown to the right of the "Users" list and type in a new name. This will allow you to identify the user easily later. After that type in a password into the "Password" field and repeat it in the "Verify" field. Click on the "Set Password" button to save the password for this user. To add a user to a channel please refer to the previous pages.

## 11.19

JUST:CONNECT ADVANCED SETUP

**USERS – DELETING A USER**

To delete a user click on the user in the "Users" list to select it. Click on the  button at the bottom of the list or press the delete key on your keyboard to delete the user. Accept the warning by clicking on the "Remove" button to delete the user immediately. Keep in mind that this action can not be undone! To add a user to the list of users available to be added to a channel please refer to the previous pages.

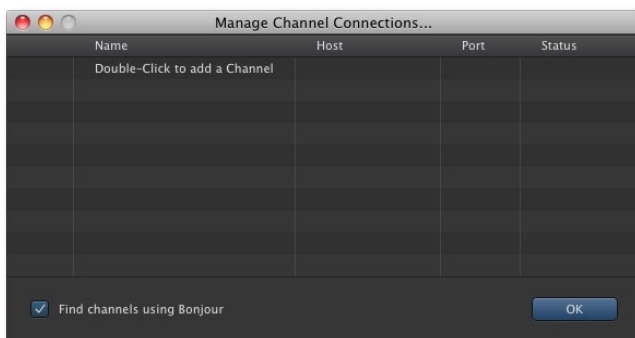
## 12

# CONNECTING TO A CHANNEL IN JUST:LIVE

## 12.1

CONNECTING TO A CHANNEL IN JUST:LIVE

## CONNECTING TO A CHANNEL ADMINISTERED BY A JUST:CONNECT ON ANOTHER NETWORK



Double-click on the "Just Live" application in the folder "/Applications/Just Live". This will start the application and display the login window. Click on the sprocket icon to flip the window. Double-click on "Double-click to add a Channel" and type in the name of the channel (in the "Name" column) as well as the IP address (in the "Host" column) and the port (in the "Port" column) of the just:connect which administrates the channel you want to connect to.

Repeat this for each channel you would like to get access to from this machine. If you don't want to have just:live display channels discovered via Bonjour in the login window, you can disable it by deactivating the "Find channels using Bonjour" option. Click on the "OK" button to flip the window back to the login window.

## 12.2

CONNECTING TO A CHANNEL IN JUST:LIVE

## RUNNING JUST:LIVE INDEPENDENTLY OF THE NETWORK CONFIGURATION

You can configure just:live to run on a single system, independent of the network configuration. just:live works with two additional applications: just:out and just:connect. The applications communicate using standard TCP/IP communication sockets. To connect two systems, one system is the server and the other the client. The client system must know two things about the server: Its IP address (e.g. 192.168.0.1) and the port number.

If the network connection between two systems breaks down for any reason (for example the cable is disconnected or a router fails), at this stage the IP address of the server ceases to exist, and the client can no longer connect to it. Specially, just:connect can no longer send information to just:out, so it will stop playing out after a certain length of time, and just:live cannot connect to just:connect in order to control the channel. The immediate effect of this is that just:live will automatically close its main windows and return to the login panel. Depending on the exact network configuration, you then may no longer see the channel you were connected to in the list of channels, or you may see the channel but not be able to reconnect to it; you will see timeout errors when attempting to connect.

This can occur even if just:out, just:connect and just:live are all running on the same system. This is because – even though all of the applications are local – they still communicate using TCP/IP, and this



communication normally uses the IP address allocated to the system. If this IP address changes, or ceases to exist in the network, then the applications will stop communicating properly, even though they are not physically separated and there are no cables or routers between them.

There is a specific solution to this problem in the case where all of the ToolsOnAir applications are running on the same system. You cannot use this solution when you wish to run the applications on different systems connected on the network. In this case you can configure all of the applications to use the special "127.0.0.1" IP address. This IP address is often referred to as "localhost" and is always assigned to the system regardless of any other network configuration. You can remove the network cable, turn off any routers, reassign the IP addresses for the system, but the "127.0.0.1" address will never change and always be available.

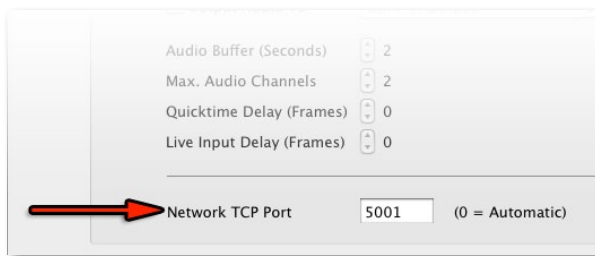
## 12.3

### CONNECTING TO A CHANNEL IN JUST:LIVE

## STEP BY STEP CONFIGURATION

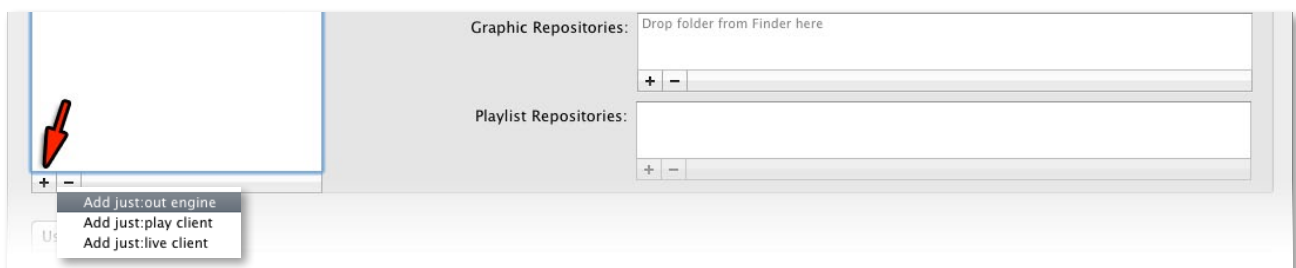
- Quit all ToolsOnAir applications.

Open just:out (located at "/Applications/Just Live"), then open the preferences (menu "Just Out » Preferences").

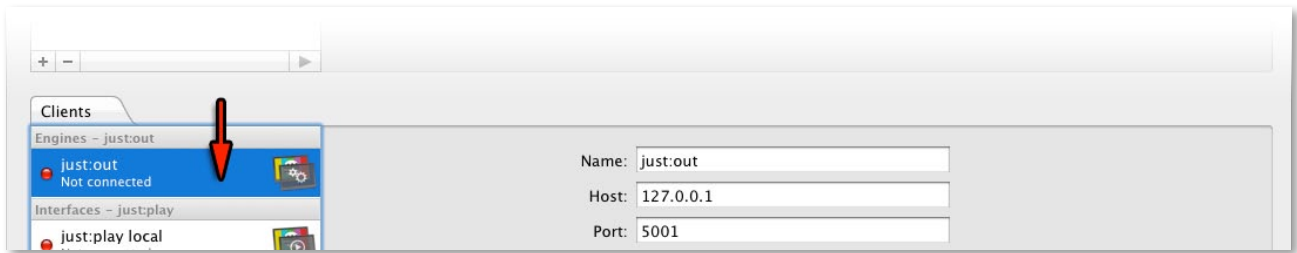


In the "Video / Audio" tab group you will see the text "Network TCP Port" with a text field to the right of it. In this field enter the port number you wish to assign to just:out which can be any number between 1 and 65535. In this example we will enter "5001".

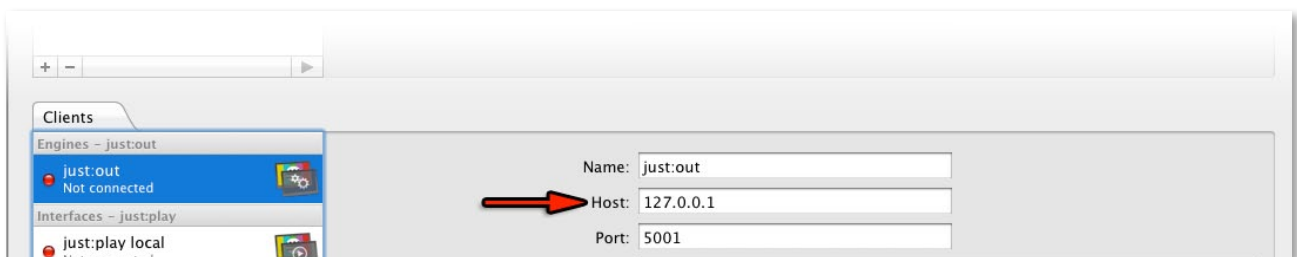
- Press the "OK" button, then quit just:out.
- Start just:connect. Click on the padlock icon found at the bottom of the just:connect window and enter your administrator password.
- The window is split vertically into three groups or tabs labelled "Channels", "Clients" and "Users". Under the "Clients" tab there is a list with the groups "Engines - just:out", "Interfaces - just:play" and "Interfaces - just:live". Underneath these groups there are two buttons with "+" and "-" labels. Click on the "+" button.



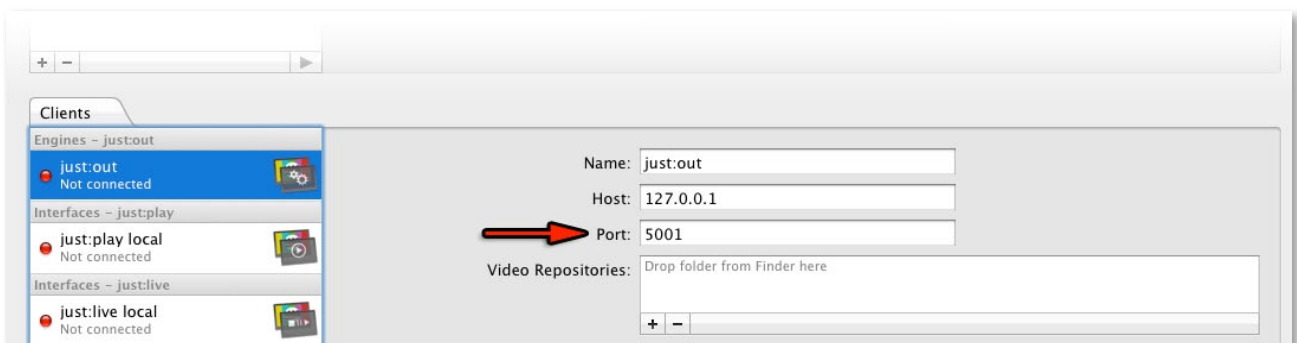
- From the menu that appears, select "Add just:out engine".
- In the "Engines - just:out" group in the list above a new entry will appear with the name "just:out". Click on this to select it.



- In the main section of the "Clients" group you will see several text fields with the labels "Name", "Host" and "Port".
- In the text field next to "Host", enter the special IP address "127.0.0.1".

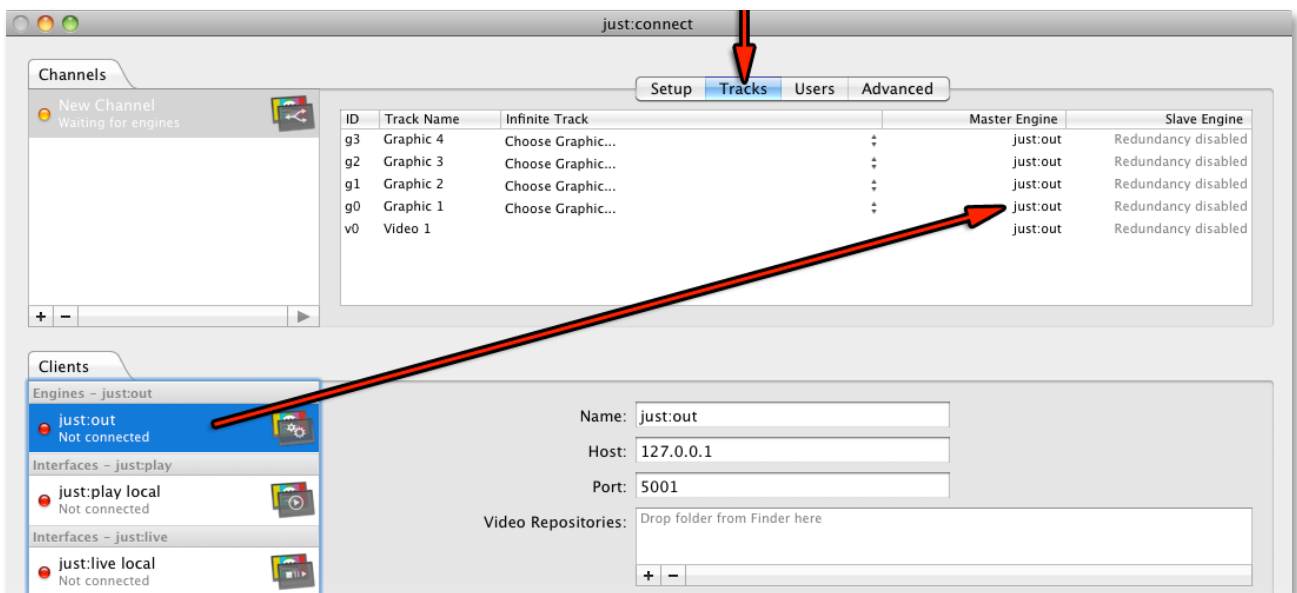


- In the text field next to "Port", enter the port number you previously entered in the preferences of just:out. In this we entered "5001", so you would enter "5001".

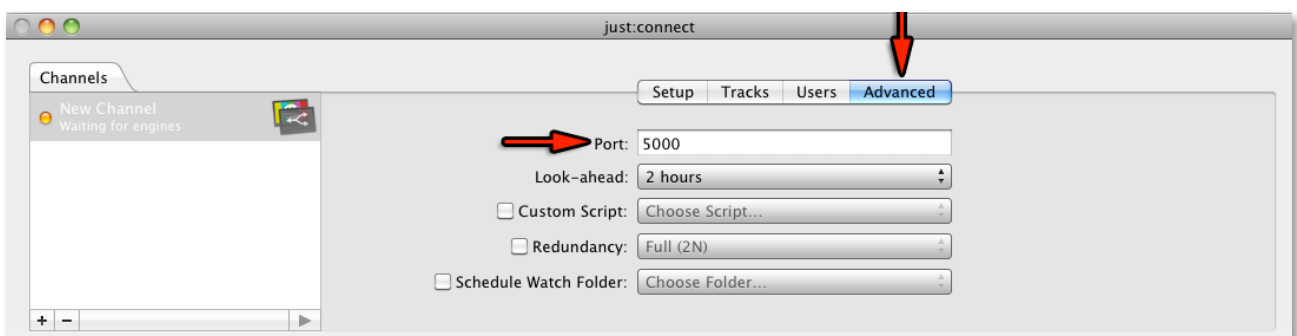


- In the main section of the "Channels" group there are tabs with the labels "Setup", "Layers", "Users" and "Advanced". Ensure that the "Layers" tab is selected.

- The main section of the "Channels" group now shows a table with the column labels "ID", "Layer Name", "Infinite Layer", "Master Engine" and "Slave Engine". Click and drag the "just:out" item from the list in the "Client" group and, holding the command key down, drop it onto the "Master Engine" column. This will change the master engine assigned to the channel for all layers to the "just:out" engine using the special "127.0.0.1" IP address.



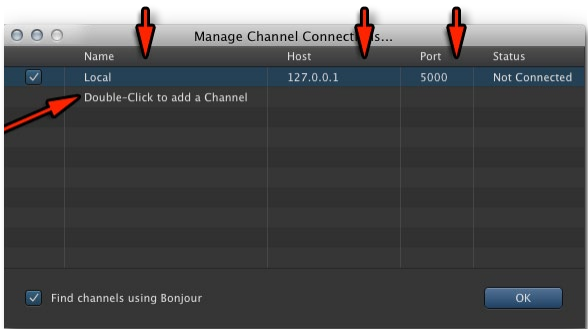
- In the "Channels" group where you currently have the "Layers" tab selected, now select the "Advanced" tab.
- At the top of the group there is now a text field with the label "Port". In this text field enter the port number to be used by this channel. It must be a different number than the one assigned previously in the just:out preferences. In this example, we used "5001" for just:out, so we'll enter "5000" for the channel.



- Stop (quit) just:connect and then restart it to ensure that the port has been properly assigned.
- Start just:out. You should see that just:connect automatically connects to just:out and it starts playing out by the fact the the timecode displayed in just:out's "Diagnostic" window starts running.
- Start just:live. You will see the usual login window with a list of available channels displayed as a drop-down menu. Next to this drop-down menu is a small button with a sprocket icon. Click on this sprocket.



The login window will flip around to show a table with the columns "Name", "Host", "Port" and "Status". One line of the table will display the text "Double-click to add a channel" in the "Name" column. Double-click on this text.



- A text field will appear. Enter the name of this channel, for example "Local".
- Double-click on the same row in the "Host" column and a text field will appear. Enter the special "127.0.0.1" IP address.
- Double-click on the same row in the "Port" column and enter the port that you previously assigned to the channel in just:connect. In this example we entered "5000", so we would also enter "5000" here.

- Click on the blue "OK" button. The login window will flip around again to the standard login.
- From the drop-down list of available channels, select the one with the name you just entered in the "Name" column. In this example it would be "Local".
- Click on the blue "Connect" button and you should be connected to the channel.

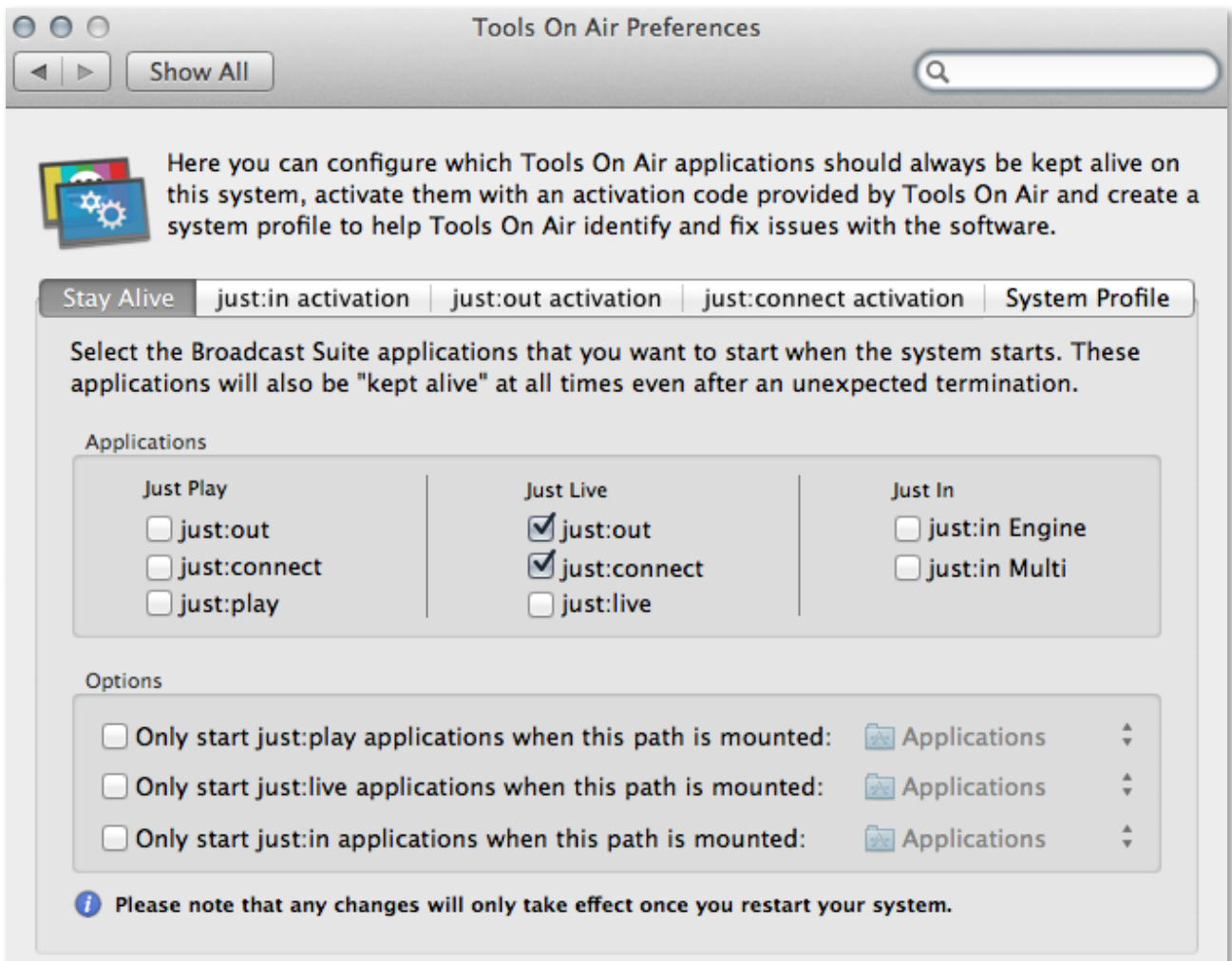


### Note

The ports described above that you assign to just:out and just:connect should not conflict with ports assigned to other applications and/or protocols. For example, ports with very low numbers (under 100) are generally used for standard purposes such as HTTP, FTP, Telnet and so on. Using higher numbers like "5000" and "5001" used in the examples above should prevent such problems, but if in doubt please contact your network administrator and ask to be assigned two ports.

If you have two or more channels defined in just:connect, you must assign a different port number to each channel. Assigning the same port to two or more channels in just:connect will lead to network errors and unexpected results.

The "Stay Alive" tab of the Tools On Air system preference pane can be used to select certain applications that should be automatically started and additionally should be "kept alive" at all times. This helps you to ensure that interruptions to your playout are kept to an absolute minimum.



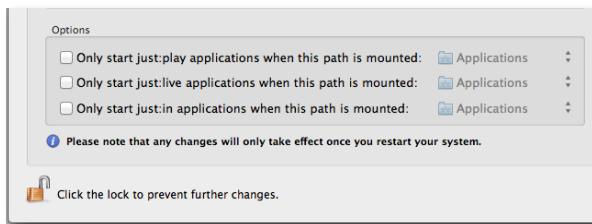
If – for example – the power fails at your facility once the power returns and the system restarts then the selected applications will automatically start as well.

Further, the "keep alive" function guards against unexpected application termination. Should just:out or just:connect crash at any time then they will automatically be restarted by the system.

**Note**

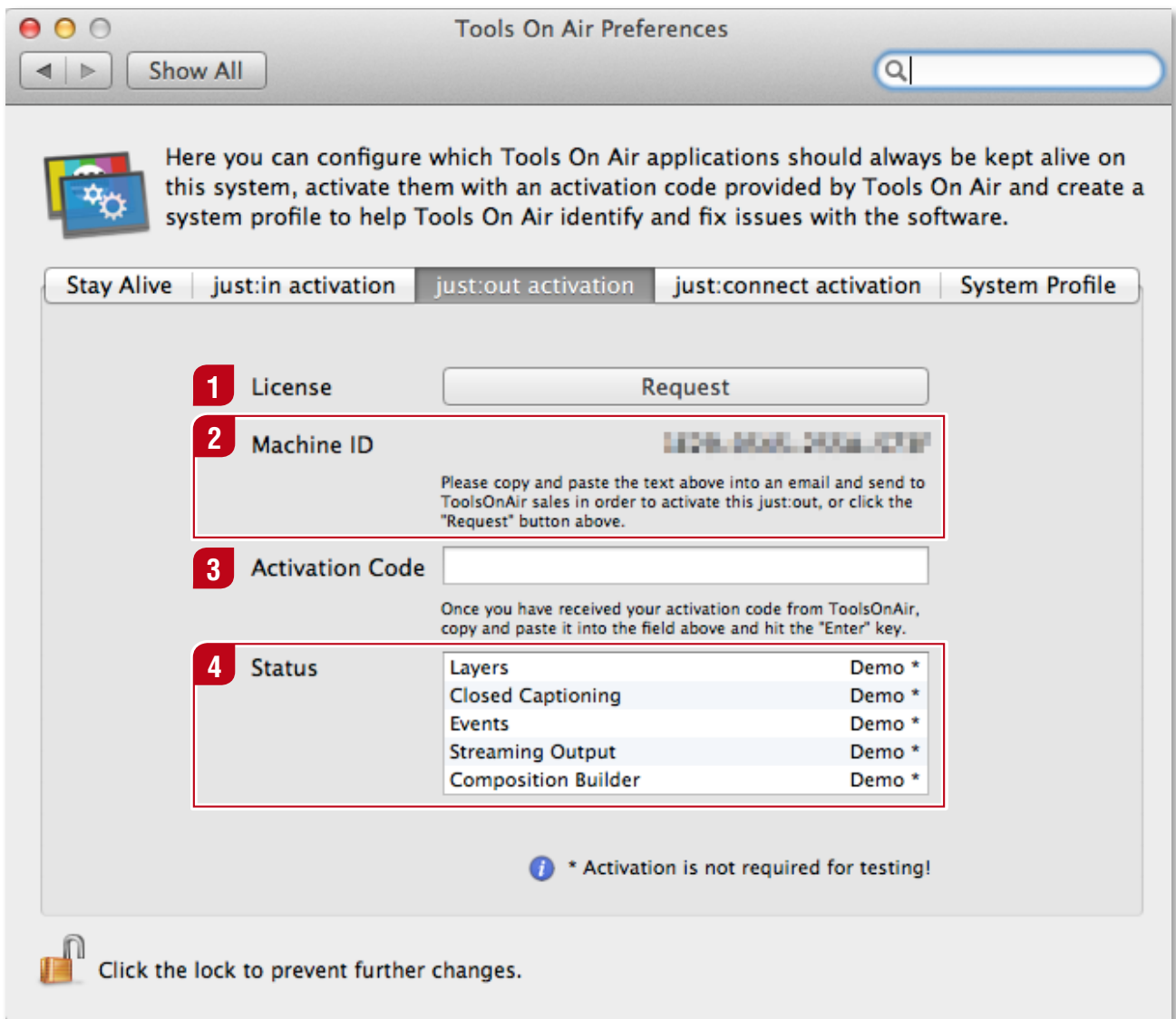
Only the applications installed on the specific system are available for selection, any other applications in the list will be disabled in the "Stay Alive" preference pane.

It is also possible to optionally select a volume (or a folder on a volume) for each of the three application "groups" (just:live, just:live and just:in). Normally (when a volume is not specified) and an application is selected to use the Stay Alive feature, that application will always be started by the system (first after booting, then automatically whenever the application terminates for any reason).



When a volume or folder is specified, those applications in the relevant group will only be started when the specified volume/folder is mounted and present. This may be useful if you have a network, SAN or other types of file systems that must be mounted during system startup that may take some additional time before they are available.

In this case, it is important not to start any ToolsOnAir applications that may rely on data from these file systems until the volume is available. By specifying such volumes in Stay Alive you can now make sure that any ToolsOnAir applications are not started by the system after booting until the relevant volume/file system is available.



- 1 License Request**  
Pressing this button opens the default email application and prepares an email with the machine ID which you can then send to ToolsOnAir.
- 2 Machine ID**  
This is the unique machine ID of the machine the preference pane is executed on.
- 3 Activation Code**  
After receiving the activation code paste it in this field.
- 4 Status**  
This area informs you about which and how many components are activated.

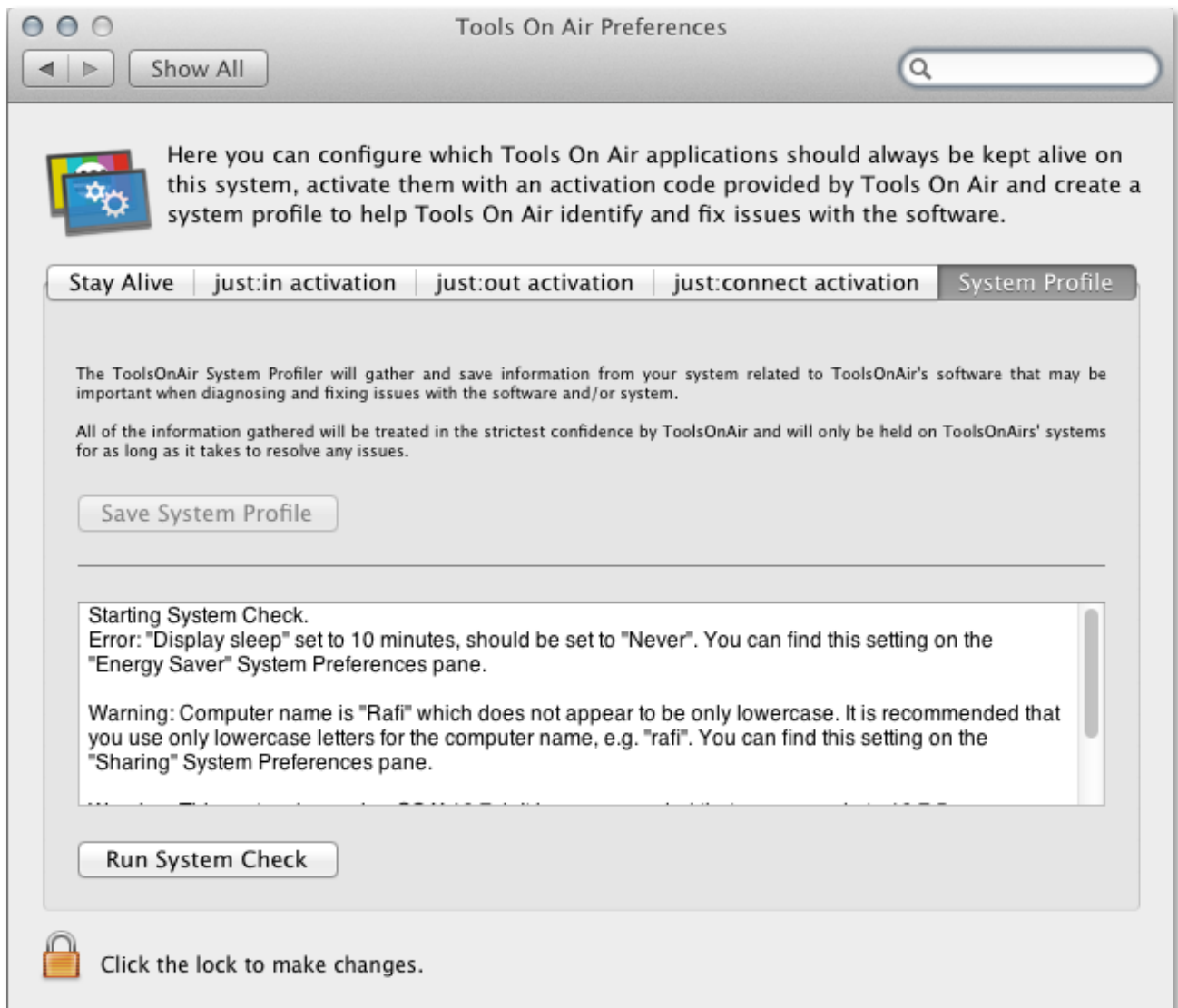
**Note**

Activation is not required for testing.

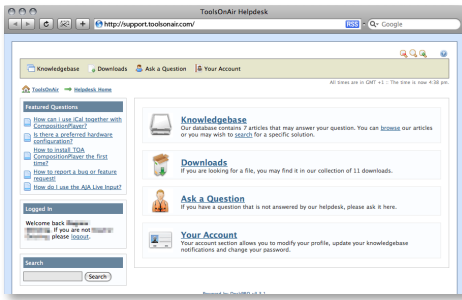
## TOA SYSTEM PROFILE

The "System Profile" tab in the Tools On Air preference pane is able to gather and save information related to TOA's software that may be important when diagnosing and fixing issues with the software and/or the system it is running on.

As described earlier in this document, you can also run the "System Check" to get a list of issues and recommendations regarding the current system configuration.







Administrators and users are able to use the ToolsOnAir online helpdesk. The helpdesk provides frequently asked questions, current software installer packages and more supplemental documents like user manuals and data sheets. You can also report bugs or submit feature requests to our developers and engineers.

<http://support.toolsonair.com/>

## (1) Duplicate names in repository folders

Defining two repository folders which contain a file with the same name creates a problem. `just:out` will find the file in the repository folder that is defined first, even if you dragged the file from the repository folder defined second in `just:live`. For example in the `just:out` preferences you define two folders, one called SD and the other HD (in that order). In `just:live` you drag a video clip called "movie.mov" from the HD folder into the timeline. If there is also a video clip called "movie.mov" in the SD folder `just:out` will play the file from the SD folder because it is defined before the HD folder.

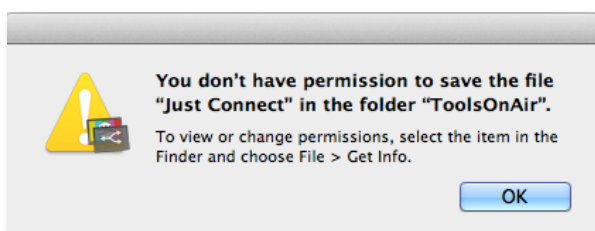
## (2) Communication problem resulting from bad network configuration

Make sure that the IP configuration of all machines is set up correctly. A non reachable DNS server (or Google DNS server) for example may prevent the proper execution of `just:out`. In case you experience network problems very often, usage of the network based workflow where the engine and the UI is used on different machines is impossible. In such case we recommend to use `just:out/connect` and play on the same machine and to configure the network to use the local mode by defining 127.0.0.1 as the default IP address. In addition we strongly recommend to avoid network architectures based on wireless technology.

## (3) Using a "Contour ShuttlePRO" changes the UI

When using the shuttle wheel of a "Contour ShuttlePRO" device for previewing a file in `just:live`'s UI and the mouse cursor is above the workbench or above the timeline, the OS interprets the shuttle movement as a scrolling wheel and therefore moves the scrollbar and/or changes the scaling of the timeline.

## (4) Permission error when launching `just:connect`



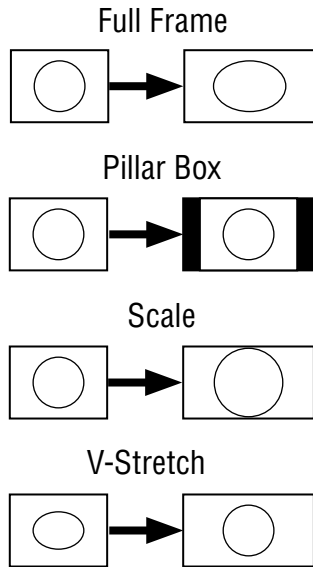
When launching `just:connect` there may be a pop-up window which informs you about missing permissions to save the file "Just Connect". Go to the folder `/Library/Application Support/ToolsOnAir` and change the permissions using the Finder's "Info" window or the `chmod` command in the Terminal.

## **(5) Using different TOA software versions**

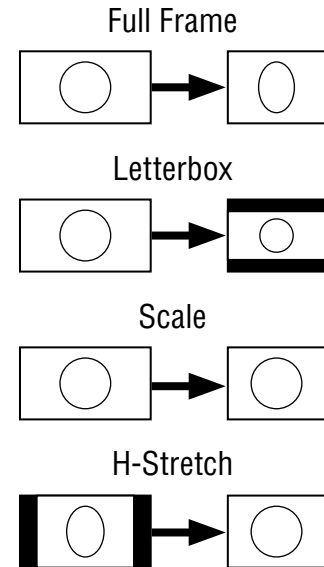
You should never mix different TOA software versions as long as you are not told to do so by a TOA engineer. This means that every just:out, just:connect and just:live user interface should be the same version. For example, you should never use a newer just:out/just:connect with an older version of the user interface and vice versa.

just:out provides a comprehensive aspect ratio control. The following illustrations may help you to understand the different options.

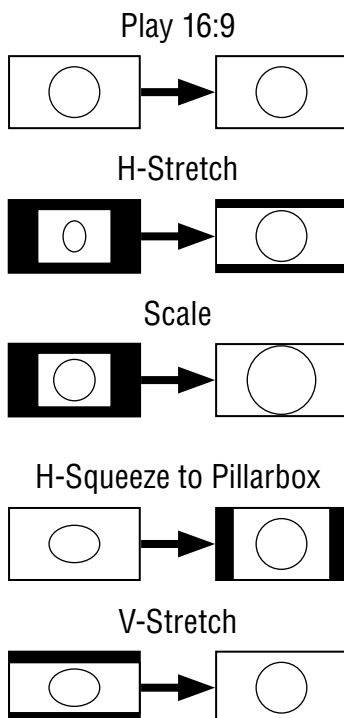
### Playing 4:3 material in 16:9



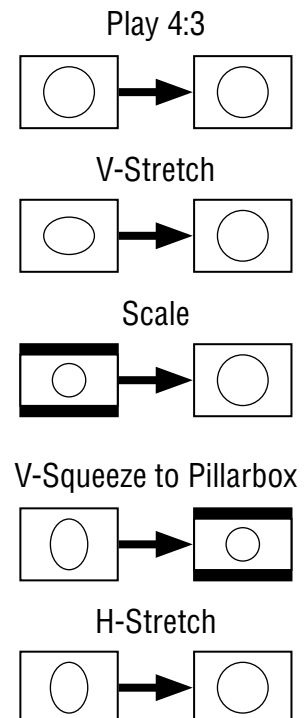
### Playing 16:9 material in 4:3



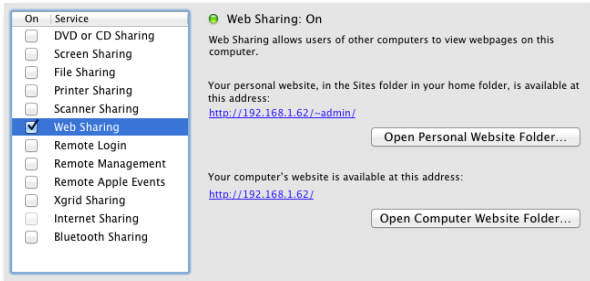
### Playing 16:9 material in 16:9



### Playing 4:3 material in 4:3

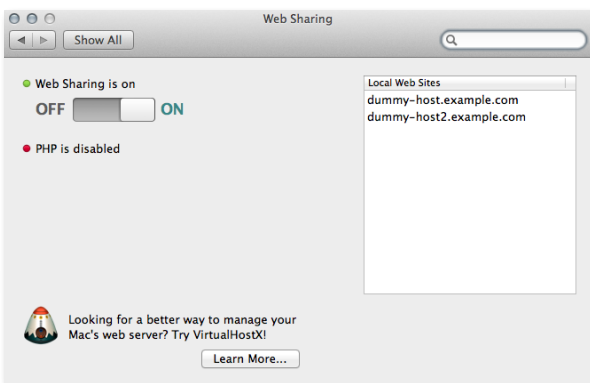


Once just:out generates a HTTP stream you can activate "Web Sharing" to publish the stream to your website or stream it directly to a device running a web browser.



### When using OS X 10.7

You can use the Apache webserver which is built into OS X 10.7 by activating the "Web Sharing" option in the "Sharing" system preference pane.



### When using OS X 10.8

Because the "Web Sharing" service has been removed in OS X 10.8 you can download a "Web Sharing" preference pane from the following URL:

- <http://clickontyler.com/blog/2012/02/web-sharing-mountain-lion/>

When the web server is running you can access the stream by opening this URL in a web browser:

- [http://IP\\_address/stream/index.html](http://IP_address/stream/index.html)

For more information regarding HTTP streaming you can visit the following URL:

- [http://en.wikipedia.org/wiki/HTTP\\_Live\\_Streaming](http://en.wikipedia.org/wiki/HTTP_Live_Streaming)