UPSTAGE USER MANUAL

INTRODUCTION

1.
2. BACKGROUND
3. PROJECT TEAM
4. TECHNICAL INFORMATION

1.

VERSION 2.1 USER MANUAL

2. BACKGROUND

[UpStage](#) is a web-based venue for cyberformance[1] - the real-time compilation of digital media into live performance, by multiple remote players for an online audience (and sometimes an offline audience as well). People anywhere in the world can participate in live performance events by using standard browser software to access UpStage, without having to download and install additional software and without needing to know anything other than a web address.

The concept for UpStage was developed by [Avatar Body *Collision*](#), a globally dispersed cyberformance troupe whose members have been experimenting with online theatrical performance since 1999, and together as Avatar Body *Collision* since 2002. UpStage was born from the desire to reach a wider audience and to make it easier for audiences and performers alike to participate in live performance via the internet.

The software combines the different elements of cyberformance - graphical avatars, web cams, audio, images, text chat (and who knows what else in the future) - into a single interface. The audience simply directs their browser to the web address at the appointed time, to watch and participate in the cyberformance.

The UpStage server application is open source and [free to download](#). It is available under dual licensing: a Creative Commons Attribution-NonCommercial-ShareAlike 2.5 License and GNU General Public Licence (GPL).

The initial development of UpStage was funded in 2003 through the Smash Palace Collaboration Fund, a joint initiative of Creative New Zealand and the NZ Ministry of Science, Research and Technology. In 2006, the UpStage project received funding from the Community Partnerships Fund of the New Zealand government's Digital Strategy to develop UpStage version 2. UpStage V2 was also supported by partners CityLink, MediaLab and Auckland University of Technology.

Currently, UpStage is supported by [CityLink](#) who provide free server hosting and traffic, and [Auckland University of Technology](#) who provide teams of final-year computer programming students to work on the ongoing development of the software. The UpStage team and user community are very grateful for this vital support.

This is the **user manual** – it provides general instructions for using UpStage version 2.1; it is divided into 6 sections:

- Introduction
- Audience
- Players
- Media Management
- Creating Media
- Appendices

Open sessions are held regularly in UpStage, providing training in the basic use of UpStage and how to create cyberformance. For dates and times for the next open session, visit www.upstage.org.nz and join the UpStage Announce list.

If you are looking for technical support including instructions for installing the UpStage server, please refer to the [SourceForge trac](#) and the [developers' mailing list](#).

For further information and updates, please visit www.upstage.org.nz.

---

[1] Cyberformance uses internet technologies to bring remote performers together in live theatrical events; www.cyberformance.org

3. PROJECT TEAM

The UpStage project was initiated in 2003 by Avatar Body *Collision*, who are Vicki Smith, Leena Saarinen, Karla Ptacek and Helen Varley Jamieson. The project continues to be managed by Helen Varley Jamieson and Vicki Smith. For more information about the Colliders, please visit www.avatarbodycollision.org.

The UpStage application was originally written by Douglas Bagnall, who has a background in open source development of online projects, and is also a digital artist. His artistic work includes the development of a film-making robot and a cloud-classifier; visit http://halo.gen.nz/.

At the end of 2010, former AUT student Paul Rohrlach joined the team as a developer and server administrator and in 2011 Francesco Buonaiuto became our volunteer documenter. Many other artists are involved in the annual UpStage Festival, and we have a growing team of open source developers who are supporting the maintenance and development of the software.

Since December 2004, the UpStage server has been generously hosted by Citylink.

Thanks to Anne Philpott, we established a relationship with Auckland University of Technology. which has seen teams of final year software development students working on UpStage as their major project since 2006.

The AUT UpStage teams to date are:

- 2012-13: Scott Riddell, Gavin Chan & Craig Farrell
- 2012: Benjamin Qin and Daniel Han
- 2011-12: Nessa Baterina, Karena Goh, Corey Robb
- 2011: Heath Behrens and Vibhu Patel
- 2010-11: Mohammad Al-Timimi, JR Malonzo and Henry Goh
- 2010: Tom Choi, Paul Rohrlach & Craig Farrell
- 2009-10: Natasha Pullenster, Nicholas Robinson and Shaun Narayan
- 2009: John Coleman and Vishaal Solanki
- 2008-09: Shaun Nesbitt, Wendy Wen, Candy Yang
- 2008: Aaron Barnett
- 2007-08: Alan Crow and Tony Wong
- 2007: Endre Bernhardt, Lauren Kilduff & Phillip Quinlan
- 2006-07: Beau Hardy, Francis Palma, Lucy Chu and Wise Wang.

Many other people have contributed to the development of UpStage through encouragement, advice, user testing, feedback, and simply believing that it was possible. The project team thanks every one of you.

If you are interested in being a part of the development of UpStage, you can join the developer list,
https://lists.sourceforge.net/lists/listinfo/upstage-list.

If you would like to be kept informed about events in UpStage, you can join the announcements list:
https://lists.sourceforge.net/lists/listinfo/upstage-announce.

4. TECHNICAL INFORMATION

UpStage is a server-side application. This means that it runs on a web-server, and the users of UpStage (players and audience) access it via a web browser; you do NOT install UpStage on your own computer (client). If you have access to a web server and wish to install your own, customisable, version of UpStage, please refer to the installation manual and other support available on the SourceForge site.

Upstage is written in Python, using the Twisted framework for event-driven asynchronous networking. It doesn't require Apache (or MYSQL or anything else). The client is written in pure Actionscript, and is compiled using Mtasc, so there is no requirement for Macromedia software other than the Flash player plug-in on the client computer.

Words typed in by the players are converted into speech using the Fesitval speech library, eSpeak and MBROLA, and streamed to the clients as MP3s.

The server runs on Debian Linux, but should easily convert to other platforms. Python and Twisted are cross-platform, but there is a line or two of shell scripts that tie in the speech synthesis.

The software has been worked on since June 2003 and contains some 8000 lines. Please visit our SourceForge site to find the latest stable version and installation documentation.

CLIENT HARDWARE & SOFTWARE REQUIREMENTS

If your computer has a browser with the Flash player plug-in, then you already have everything you need to use UpStage. Obviously faster processors and higher RAM give improved performance, but UpStage has been designed to work on relatively low-spec client machines.

A broadband internet connection will give the best performance, but UpStage performs surprisingly well over dial-up. The main disadvantage when using dial-up is that the load time for each stage is longer. You may need to allow up to 15 minutes to load a stage, depending on how many graphics are on it. Once it's loaded, the real-time interaction and overall performance of UpStage is not dramatically worse on dial-up than on broadband.

UpStage has been designed to run on a wide range of clients using the Macromedia Flash Player plug-in (version 7 or above). It should function properly in all standard browsers such as Firefox, Safari, Internet Explorer and Opera.

Linux users may need to install gsfonts and gsfonts-x11 (see the section Troubleshooting for information about this).

FIREWALLS

UpStage will function through most but not all firewalls, depending on how the firewall has been set up.

If you install your own UpStage server, it will ask you to specify which ports you want to use (the defaults are 8081 and 7230). You will need to ensure that your users have the correct ports open.

The Open UpStage server uses ports 8084 and 7230-7233, therefore these ports need to be open if you are trying to access this server through a firewall. These ports are open by default in most private internet connections, but some organisational networks will close any "unnecessary" ports.
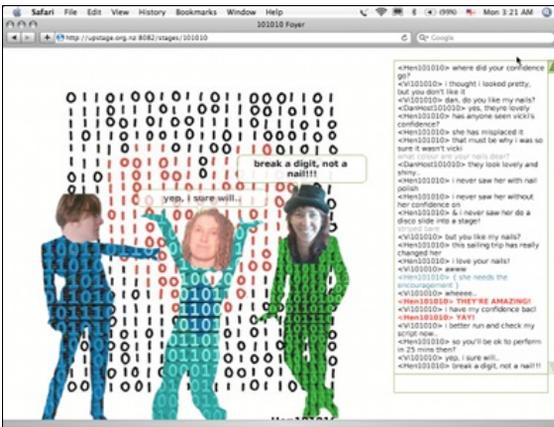
AUDIENCE

5. AUDIENCE VIEW

Audience members enter UpStage by following a web link from an email or another web page, and participate in the performance via the text chat. Audience members do not need to download or install any additional software as long as they have a browser with the Flash player plug-in. Audience members do not log in, and therefore do not have access to the same on-stage tools as Players do.

A splash screen covers the stage while it loads, preventing the audience from interacting until the stage is fully loaded. Once the stage has loaded, the audience will see any graphics that have already been placed on the stage, they will see and hear the performance, and they will be able to participate in the text chat.

The audience view of the stage is shown below: the text chat window is at the right, with an input field at the bottom and up-down scroll arrows on the right top and bottom corners. The rest of the screen is the "stage" where the visual action of the performance takes place.

6. AUDIENCE CHAT

Audience members are also known as "chatters", because they can interact with the performance by typing into the text input field at the bottom right of the screen. This text appears in the text chat window, amongst the Players' text. Player text is slightly darker and larger than audience text, and identified with the avatar's name. Audience text is grey, silent and anonymous.

The screengrab above, from *West Side's Story* (101010 UpStage Festival) shows audience and player text in the chat.

The audience chat has a life of its own. Often at the beginning of a performance, audience members will ask where other people are physically located and have conversations between each other. During the performance, the audience can respond to and commentate on the action of the performance, embellish the narrative or provide a counterpoint. Obviously every audience is different, making every performance significantly different - sometimes an audience may be very quiet but at other times very chatty.

REPRESENTING THE CHAT

Audience text can also be used by players within the performance, such as repeated or responded to in the performance. Another effective incorporation of audience chat into the performance is the projection of chat text and its subsequent capturing and re-presentation as a web cam image.

The screengrab above is from *Belonging* (Avatar Body *Collision*, 2007) and shows the representation of text from the chat window in a webcam avatar.

COMMANDS

Audience members can use a number of commands in the text chat; these are instructions typed into the text chat input field after a / , for example:

/asize 8 (or another number): this changes the font size of audience-input text to 8 (the default size is 4) on that computer. This is useful for people with visual impairment and if the screen is being projected for a group audience.

/psize 8 (or another number): this changes the font size of player-input text, as above.

/info: gives some information about UpStage.

Players have a lot more commands available to them - see the chapter on Commands for more information.

PLAYERS

7. LOGGING IN

Players log in to UpStage to create and present performances. They do not need anything other than a browser with the Flash player plugin to do this.

Note that audience members do NOT log in to UpStage; their view of the stage is different to that of logged in players. Players watching performances by other players are advised to log out first so that they experience the performance as it's intended to be viewed, without the distraction of the on-stage player tools.

There are two levels of player log-in: "player only" and "admin". The player-only log-in is used for guests and new users, and gives access to the on-stage player tools but not to the Workshop. The admin log-in gives access to the Workshop as well, meaning that the player can upload and edit media, and create and manage stages. Having a player-only log in helps to reduce the incidence of inexperienced users uploading unuseable media.

For the UpStage Open Server, 8084, players can log in at http://upstage.org.nz:8084 or at http://upstage.org.nz:8084/admin. Once logged in they will find themselves in the Foyer, a customisable landing page that provides links to existing stages and to the media management tools.

Players can change their own passwords and edit other information in their profile.

8. PLAYER VIEW

Players log in to UpStage to create and present performances. They do not need anything other than a browser with the Flash player plugin to do this.

Two levels of logging in: as "player only" which gives access to the on-stage player tools (described above) or "admin" which also gives access to the workshop.

Once logged in, they have access to the Workshop area where they can upload and manage the media to be used on stage, and to the on-stage tools that enable them to manipulate media for a performance.

The "player view" of the stage is different to the "audience view".
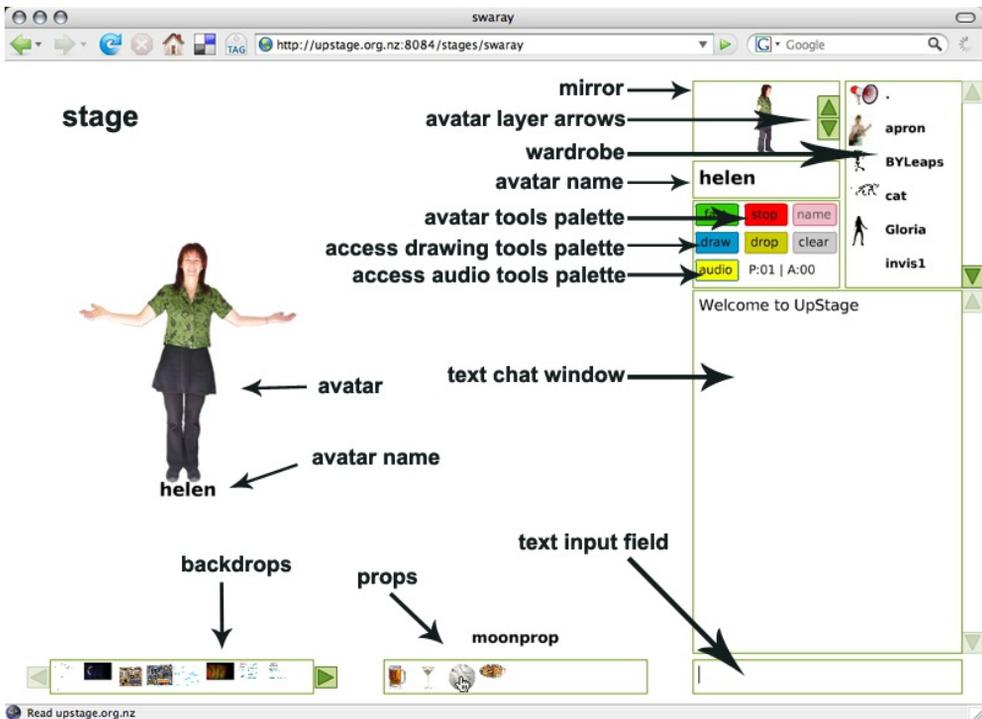
The Wardrobe (top right hand corner) is a scrollable list of the avatars that have been assigned to this stage. The Mirror (the square beside the Wardrobe) shows the avatar you are currently holding, with its name in the rectangle under the mirror. There are tools below the Mirror, and image galleries for backdrops and props along the bottom of the stage area. Players see a smaller text chat window than the audience.

9. ON-STAGE PLAYER TOOLS

Logged-in players have access to a range of on-stage tools, not visible to the audience, which enable the real-time manipulation of preloaded media and live elements on the stage.

HOLDING AND MOVING AN AVATAR

The avatars assigned to a stage appear as small icons in the Wardrobe. To hold a particular avatar, click on its icon in the Wardrobe (use the arrows to scroll up and down the Wardrobe). The icon will disappear from your Wardrobe and appear in your Mirror, the square area to the left of the Wardrobe. This shows you which avatar you are currently holding. A greyed-out icon in your Wardrobe means that another player is holding that avatar.

Once you have an avatar in your Mirror, click on the stage area and your full-size avatar will appear there. Click in another place, and it will move there.

Tools

The Player tools are the set of buttons below the mirror, and the green arrows in the mirror. These arrows allow you to move your avatar in front of and behind other avatars on the stage.

Fast/Slow

This button controls the avatar movement – fast causing the avatar to jump to where you click, and slow causing it to glide there. The button shows the action that the avatar will change to when next clicked – for example if your avatar is gliding, the button will show fast. Click on it to change to fast, and the button will become orange and say "slow".
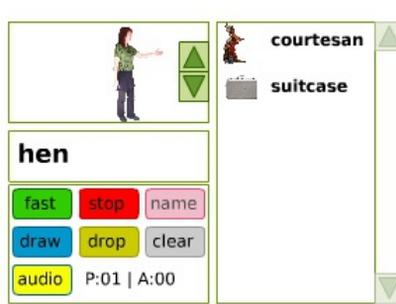
Stop

When your avatar is gliding (in slow mode), click on stop to stop it at any point in its trajectory.

Name

This button will hide or show your avatar's name on the stage – this is particularly useful when working with invisible avatars. When you first hold an avatar, the default state is for the name to be showing, so click on "name" before you place the avatar on the stage if you don't want the name to show.

Draw

This button changes the function from acting to drawing, displaying the drawing tools palette instead of the avatar tools. See Section 3.10 for more information about drawing.

Drop

The drop button will remove your avatar from the stage, and put it back in the Wardrobe so that you are no longer holding it. If you want

to leave your avatar on the stage while you operate another avatar, simply select the new avatar from the Wardrobe without clicking drop.

Clear

Use clear to remove all unheld avatars and props from the stage.

Audio

This button displays the audio tools palette. See Section 3.11 for more information about using audio.

Player/Audience counter

Below the control buttons, a counter keeps a live tally of the number of players (P) and audience (A) present on stage at any time. Typing /details will list the usernames of the players and the number of audience in the chat window.

Operating Multi-frame or Animated Avatars

Avatars that have been created as .swf animations, or uploaded as multiframe avatars, allow you to change the avatar while it is on stage.

Animated Avatars

Created as .swf files, these avatars will animate in the Workshop, Wardrobe and Mirror. When placed on stage, animated squences will appear as a still image in the first frame of the animation. Type /a 0 to start the looped animation, and to display a different still frame type /a 1 (the default), /a 2, /a 3 etc.

Flash Movieclips will animate on loop without typed-in commands. You need to create these as movies in Flash – see Section 4.4 for more information.

Multi-frame Avatars

These work in a similar way to the animated avatars, but are created by uploading a series of still images (in .png or .jpg format) rather than using Flash.

Changing Your Avatar's Name

/nick bob

To change the name of the avatar you are holding, type /nick newname in the text input field at the bottom of the chat window. You will see the name underneath your mirror change, and when the avatar is on stage the new name will appear below it (unless you have used the "name" button to turn off the name). The new name will also appear in the text chat window before the text your avatar speaks.

When using invisible avatars, you can make words float around the stage by showing the name, and using /nick to change the visible word on screen. Up to 9 characters will be visible on stage; if you have a longer name it will all be visible in the text chat.

HOLDING AND PLACING PROPS

The props assigned to the stage appear as small icons in the Props Gallery at the centre bottom of the screen.

20

When you roll your cursor over the icons, a name label appears, allowing you to distinguish between similar or very small props. If more than 8 props are assigned to a stage, arrows will appear at either end of the bar to allow you to scroll through the props, which are displayed alphabetically.

You must be holding an avatar and be on stage to hold a prop. Click on the prop icon in the Gallery, and it will appear at the top left of your avatar. Click again on the prop icon in the Gallery, and it will remove the prop from your avatar. If another player clicks on the same prop that you are holding, it will be transferred to their avatar.

CHANGING BACKDROPS

The backdrops assigned to a particular stage appear as small icons in the Backdrops Gallery, at the bottom left of your screen.

Roll your cursor over the icons to display the name label so that you can accurately choose the backdrop you want. If more than 8 backdrops are assigned to a stage, arrows will appear at either end of the bar to allow you to scroll through the backdrops, which are displayed alphabetically.

Click once on the icon to place the backdrop onto the stage; click the icon a second time to remove it.

Multiframe backdrops can be used in the same way as normal backdrops; to change the backdrop's frame, type /b 1, /b 2 etc in the text input field. Type /b 0 to make the backdrop animate through its frames.

10. SPEECH AND TEXT CHAT

To make your avatar speak, type into the text input field below the Chat window (bottom right of your screen) and hit enter (if there isn't a blinking cursor line there already, you may need to click the mouse there).

Your text will appear with your avatar's name in the text chat window, as well as on the stage beside your avatar (unless you have not put your avatar onto the stage). It will be spoken aloud in the voice selected for that avatar (note that you cannot change an avatar's voice on stage, this must be done in the avatar edit screen from the Workshop).

The audience can also type into the text chat, but their text won't be spoken out loud and only appears in the text chat window, not on the stage. As the audience doesn't log in, there are no names connected to the audience chat. If you aren't holding an avatar, your text will appear as audience text.

You can **make your avatar "think"** by typing : (colon) before the text. Your text will appear in a thought bubble over the avatar, but won't be spoken aloud. It will appear in the text chat window in blue and with curly brackets around it (see image below).

To **make your avatar "shout"**, type ! before the text. Your text will appear in a red-outlined bubble over the avatar, and in the text chat window as red capitalised text. It will be spoken aloud and the avatar's voice is subtly modified upwards in pitch.

AVATAR VOICES

UpStage uses the Festival Speech Synthesiser and MBROLA to generate text2speech audio for the avatars' voices.

When you upload a new avatar, you will arrive at the avatar's edit screen where you can select its voice from a dropdown menu. To change the voice of an avatar that has previously been uploaded, you can access the edit screen from anywhere where you can click on the avatar name (e.g. the Manage avatars screen or the Stage edit screen). Once you have changed the voice, you will need to reset the stage(s) it is assigned to for the change to take effect.
Note that changing an avatar's voice will change it on all stages that the avatar is assigned to; therefore you should not change the voice of an avatar that is not yours or that you think other people may be using on another stage.

See Section 5.5 for more information about available voices, descriptions, and how to add more.

SAVING THE LOG

The text chat is automatically saved by the server, and can be viewed by adding "/log" to the end of the URL in the address bar of your browser (e.g. http://upstage.org.nz:8084/stages/walkthrough/log). You can then either select "Save as" from your browser's file menu, or copy and paste the text into a text file.
Resetting a stage (from the Stage Edit screen in the workshop) will permanently delete all of the text from the chat log.

WHISPERING

Players can "whisper" to other logged-in players; this lets you communicate with your fellow players without the audience hearing or seeing it. You can whisper to an individual player, a number of players, or to all logged in players present on the same stage as you. You can also whisper to players on other stages, but you must use their usernames, and there is currently no way to whisper to a player who is in the Workshop and has no stage open. Note that you can have multiple stages open at the same time in different browser tabs or windows, and you can have the Workshop open as well as a stage or stages.
Typing a whisper command incorrectly displays a "how to" message in your chat
field. If messages are not delivered to users (due to misspelling a username, or a user not currently being online), the whisper "bounces" and informs the sender what went wrong in the chat field.
Commands:

To whisper:	Type:
to a single player	/wh username1=Message
to multiple players	/wh username1,username2,username3=Message
to all users on the current stage	/wh *=Message

Note - /whisper works exactly the same as /wh but obviously it's easier to just type /wh

11. DRAWING

Clicking on the "draw" button in the control panel reveals a different set of tools – the Drawing Palette. You can be still holding an avatar while you are drawing and can speak, but you won't be able to move your avatar on stage. Clicking on the "act" button will return the Wardobe, Mirror and Controls so that you can operate your avatar.

Drawing allows you to draw directly onto the stage, in one of four layers; the layers correspond to the four boxes on the right hand side of the drawing palette. Click on the red pencil icon to select a layer to draw in. The black border shows which layer you have selected; a pale blue border indicates that another player is holding that layer. If you select a layer with a blue border you will "steal" it from the other player. The top box will draw on the top layer, obscuring avatars. The next two layers will let you draw amongst the avatars, and the bottom layer draws behind the backdrop.
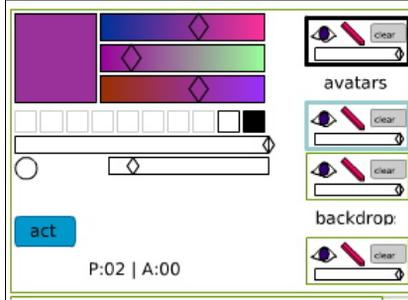
Click on the eye to hide or show your drawing. Click on "clear" to erase the all the drawing from that layer. Note that it is currently not possible to erase only part of the drawing in a layer.

The slider in the layer box controls the transparency of what has already been drawn in that layer: move it to the left and the drawing in that layer will become more transparent; move it all the way to the left and it will vanish completely. This is useful for fading prepared drawing in and out.

The colour picker at the top has three sliders, letting you adjust the colour of what you're about to draw. Move the sliders to change the hue, and the new colour appears in the square to the left of the sliders.

The slider immediately below the colour picker controls the transparency of what you are about to draw (use the slider in the layer box to change the transparency of something you've already drawn).

The circle and slider below the transparency slider control the size of your brush. Move the slider to the right and the circle will increase in size, indicating how big it will appear on stage. Move it to the left to make it smaller.

Currently it is not possible to erase, other than to clear everything in a particular layer. If you are trying to draw a curved line and finding that it appears as sections of straight lines, you are moving your mouse faster than UpStage can keep up with; try drawing slower for smoother curves.

If you want to draw a completely straight line, hold the shift key down while you draw the line.

12. AUDIO

Prerecorded MP3 audio files can be uploaded and played in UpStage.

Click on the yellow "audio" button to reveal the Audio Palette. Audio files assigned to the stage will appear in a list on the right, with musical notes indicating music tracks and "sfx" indicating sound effects. Use the green arrows to scroll up and down if there are more than six tracks assigned to the stage.

Click on a track and its file name will appear in one of the three slots, where you can start, pause and stop individual tracks, set looping and control the volume with the slider.
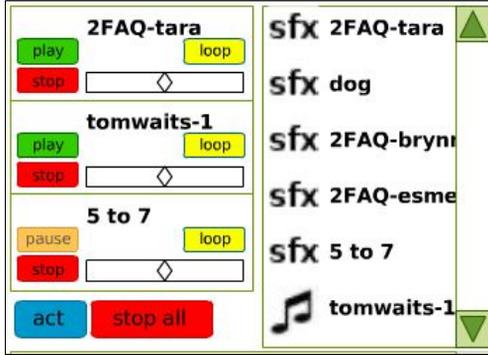
You can stop all tracks at the same time using the "stop all" button.

Click on the blue "act" button to return to the avatar tool palette. (Your avatar can still speak and move when you have the audio palette open).

KNOWN ISSUES

At the time of writing (November 2011), the list of files in the audio palette is displayed in a random order. This is not very helpful if you have a lot of audio files assigned to one stage, as you have to scroll up and down to find the file you want. We hope to have the list alphabeticalised in the next release (v2.4.1).

There is also a known bug with being unable to stop a looping track, if after you have set it playing and looping you fill up the other two tracks and then add a fourth. The fourth track will replace the first looping track, but it won't stop it. "Stop all" will also not stop it. The only solution is to reload the stage. This bug has been lodged on SourceForge and we hope to fix it soon, but in the meantime the workaround is to be careful not to select a fourth track when the first one is still looping.

13. WEBCAMS

Players wanting to use live video in UpStage will need to have a web cam and a separate application that allows the player to FTP their video to the server as motion JPEGs.

WEB CAM FTP SOFTWARE

FTP freeware or shareware is available for the major operating systems. Theoretically any web cam FTP application should work, however the following software has been researched and tested for compatability with UpStage. Please note that this is by no means all the available software, and as time passes there will be more and better options.

The main features that we have looked for in web cam FTP applications are:
- ease of use;
- free or cheap, with no advertising on the image;
- the ability to resize the web cam image to custom sizes;
- any special effects are a bonus.

Please scroll down this page for screenshots showing how to configure the applications listed below.

Recommended Webcam FTP Software

Windows: Fwink

Fwink (version 0.9.95 beta) is free, has no ads, allows customised sizing and has some special effects including text messages and overlay images.

http://lundie.ca/fwink/

Mac: Evocam

"EvoCam is the ultimate webcam software for Mac OS X. Use EvoCam to publish a webcam with streaming video, view and record video from network cameras and video servers, create timelapse movies, or use it as part of your home security system with its configurable motion sensors - these are just a few of the things you can do with this easy-to-use yet incredibly powerful webcam software!"

Evocam is not open source, and it's not free (but it is pretty cheap!) but at the moment it seems to be the most reliable and featured-packed webcam ftp app for Mac. It has useful features such as customisable sizing of the window and a variety of effects.

http://www.evological.com/evocam.html

Linux: Camstream

CamStream is a tool for webcams and TV grabber cards that allows for streaming video from multiple video sources. It can save and/or upload (FTP) timed snapshots. It provides a GUI frontend to control the video devices.

http://freshmeat.net/projects/camstream/

Web Cam FTP Configuration

Once you have chosen and installed the appropriate web cam software, you will need to configure it to send the web cam images to your UpStage server. Following are the settings you will need:

Host: URL of your UpStage server

username: (set by your UpStage administrator)

password: (set by your UpStage administrator)

filepath: filename.jpg

Port 21 (or other, set by your UpStage administrator)

Before you begin to upload your web cam image to UpStage, check the pixel size, bearing in mind that images increase in size when they are uploaded as avatars to UpStage. If it is 320 x 240 or larger, it will take up half the stage or more, and impact on the speed and performance of UpStage for everyone. We strongly recommend using a web cam FTP application that allows you to scale your image to any size.

You will need to set a trigger that tells the application how often to take a new image; we recommend 2-3 seconds, as any faster is likely to be faster than the image can travel from your computer to the server and out to the other players and audience.

Once you have configured your web cam and are sending a live stream to your UpStage server, you should be able to find the filename of your web cam stream in the list of available video streams in the "Add a new avatar" section of the workshop. You can then create an avatar using that stream, and assign it to a stage in the "Manage stages" section. Use it on the stage as you would a normal avatar.

Passive or active?

You will need to set the FTP upload to passive or active (not passive) mode according to the configuration of your server. We have recently had issues which suggest that this setting will also vary according to your client computer's platform: with the new (2010) UpStage server, we have discovered that Fwink on Windows needs to be in passive mode to work, whereas Evocam on Mac and Camstream on Linux do not work in passive mode, and need to have this option toggled off.

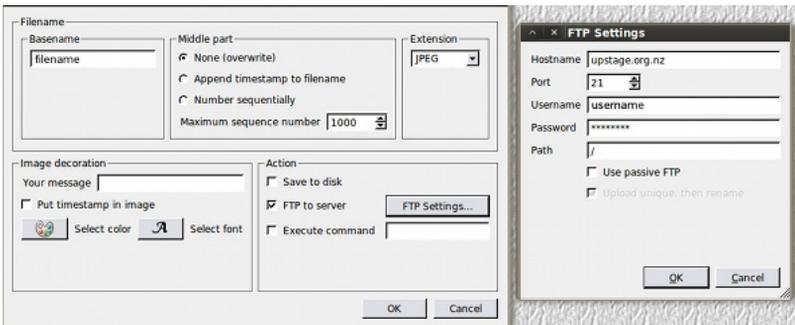If you are having trouble with web cam FTP, the first thing to try is toggling passive mode.

Fwink configuration:
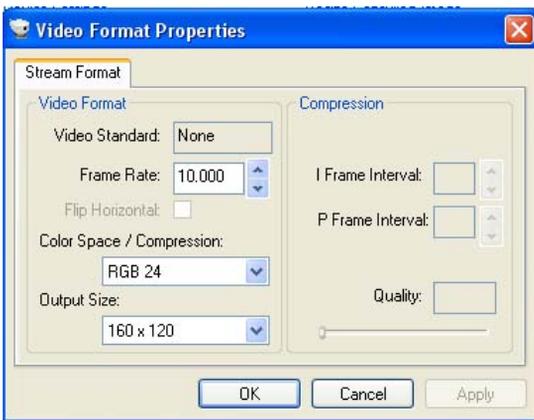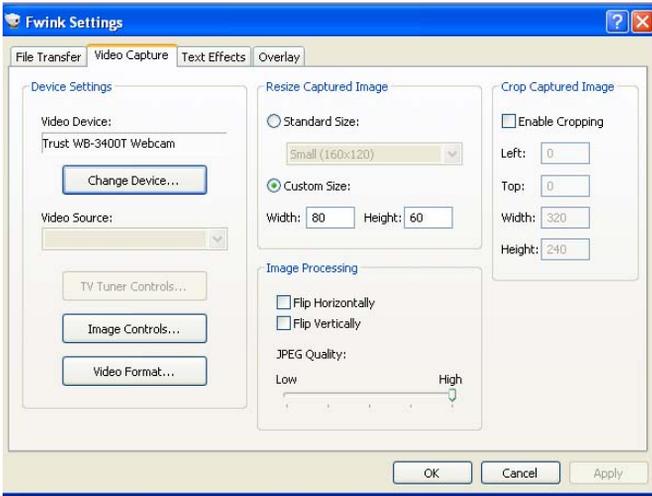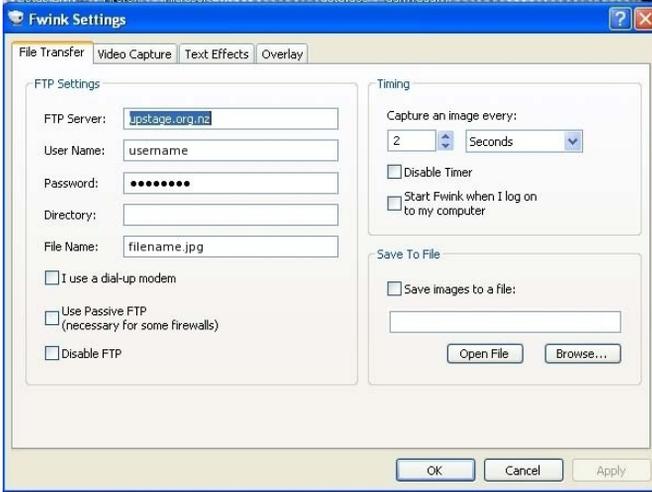
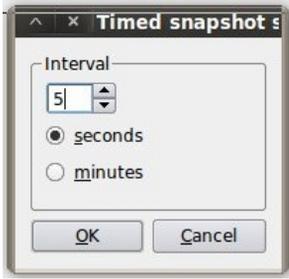*Evocam configuration:*
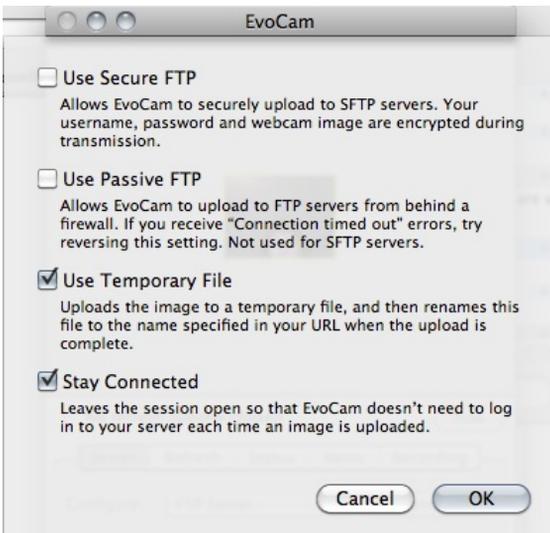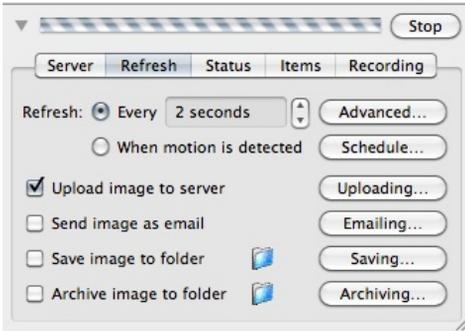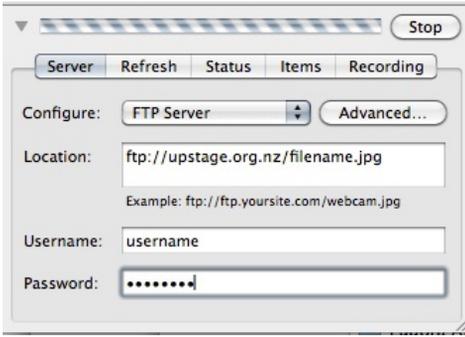
Camstream configuration:

MEDIA MANAGEMENT

THE WORKSHOP INTERFACE

Once you have logged in to UpStage, you arrive at the Workshop, from where you can either proceed directly to the Stages to rehearse or perform, or choose from a range of administrative options. These options allow you to create and manage Stages and Players, and upload and manage Avatars, Props, Audio and Backdrops.
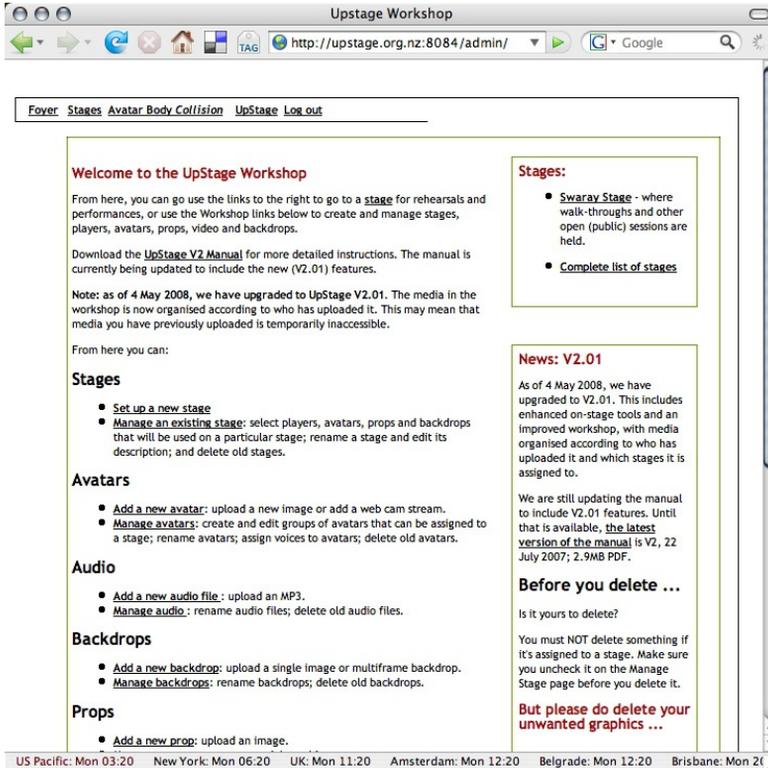
The Workshop screen is an HTML page and can be manually updated by an UpStage administrator to include direct links to the stages you are currently working on and notices for other players using this UpStage server (as shown in the above screengrab, in the right-hand column).

The text links at the top and bottom of the page are also customisable; this screengrab shows links to the Foyer (http://upstage.org.nz:8084/), the Avatar Body *Collision* web site (http://www.avatarbodycollision.org/), the UpStage web site (http://www.upstage.org.nz), a log-out link and "Stages". The "Stages" link gives a list of all the stages on this UpStage server, from which you can click on a stage name to enter that stage. You can also see how many players or audience are on each stage.

"Guest" player log-ins allow access this list of stages, not the whole Workshop interface. From here guests can click on a stage and have full access to the on-stage player tools, but because they don't access the Workshop they can't upload media. Guest log-ins are usually used in introductory workshop situations, to prevent people from uploading media before they know what they are doing.

15. CREATING AND MANAGING PLAYERS

From the main Workshop screen, under the heading "Players", you create new players and manage existing ones. You must be a superuser to add new players, manage players other than yourself, or remove players.

Changing your password

If you are not a superuser, the "Manage Players" link will only allow you to change your own password. If you have been given a generic password, it is recommended that you change this to something more secure and memorable when you first log in.

Add a new player

Create a log-in for a new player, and set their permissions:

- Act: this gives access to the on-stage player tools, but not to the Workshop interface.
- Administer: this gives access to the on-stage player tools and the Workshop interface.
- Add or Remove Players: this is the super-user, who can do pretty much anything.

The status of the player also regulates the uploadable file size:

- Act: no access to Workshop.
- Admin: 1 MB
- Superuser: 2 MB

However files of this size would not normally be necessary; the larger the files, the longer a stage will take to load. Please refer to the Graphics section for further information about file sizes.

Manage players

If you are a superuser, you can:

- create new Player log-ins;

- change any Player's username, password and permissions;

- delete Players.

From the Workshop, click on the link "Manage Players" and select the Player you wish to manage from the list of Players. Make the desired changes and click ok.
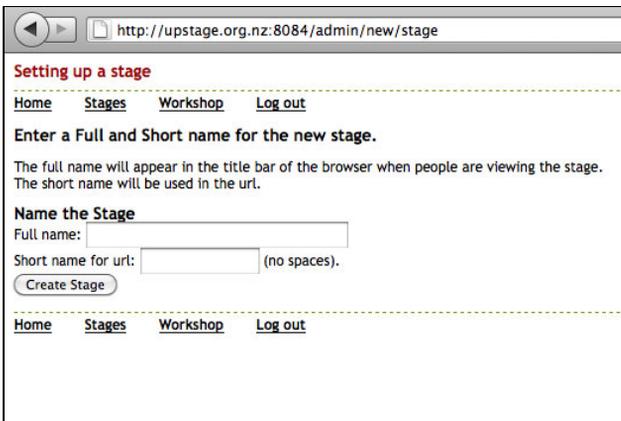
16. CREATING AND MANAGING STAGES

"Stages" are web pages on which UpStage performances take place. An UpStage server can have any number of stages, and media uploaded to the server can be assigned to multiple stages. You can also be "in" more than one stage at a time, simply by having different stages open in different browser tabs.

SET UP A NEW STAGE

To create a new stage, click on the link "Set up a new stage" and give your stage a name. This name will appear in the list of existing stages. It won't be accessible to audience members until you make it public in some way (for example, create a link to it from the Foyer, put it on your own web site or email the URL to your target audience), but it will be visible to logged-in players and can be accessed for rehearsals or closed performances.
The URL for a stage is http://yourserverURL/stages/stagename – for example, http://upstage.org.nz:8084/stages/swaray. You can create a link directly to a stage from the Foyer or from another web site by editing the HTML just as you would create a link to a web page.

MANAGE STAGES

From the Workshop, click on the link "Manage an existing stage"; you will see a list of stages, and if any players or audience are on a stage it will be shown here (numbers of players/audience to the right of the stage name).

This is where you can:

- assign and unassign avatars, props and backdrops for an existing stage;

- rename the stage;
- edit the splash screen message for a stage;
- change the background colour for the backdrops and props galleries (useful if you have props or backdrops that are mostly white and difficult to click on with a white background);
- make the debug messages display on the stage (useful for programmers trying to trace bugs!);
- reset the stage;
- delete unwanted stages.

Delete a stage

To delete a stage, select the check box beside the stage name, scroll to the bottom of the list and click the "remove selected stages" button. Note that deleting a stage does not delete the media assigned to that stage.

Manage (edit) an existing stage

To manage (edit) a stage, click on its name. Note that if you edit a stage while there are other people on it, the stage will automatically reload for them. UpStage will try to stop you from doing this with messages warning you that other people are using the stage; you can override these messages. It is courteous to do this only when the people on the stage know that it's going to happen.
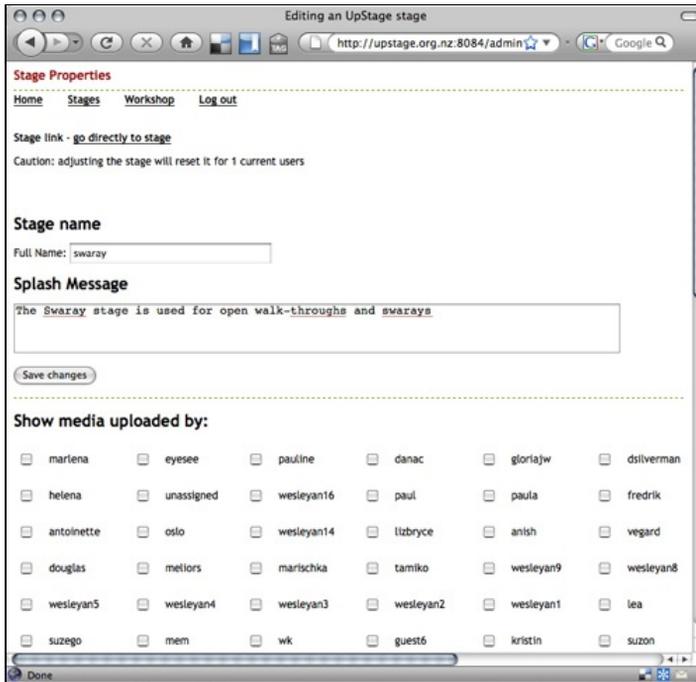
Assign media to a stage

Select the stage you wish to edit then follow these steps:

1. select which users' media you want to see by clicking on the check box by the username and clicking the "Display Media" button;
2. below the "Display Media" button, click on the username or the + sign to expand the list of media uploaded by that user;
3. select the media you want to assign to the stage by clicking in the check boxes beside the thumbnails (note that media uploaded as .swf will not display a thumbnail image, but you can identify it by its name; clicking on the name will take you to that media's information screen, so that you can be sure it is the media that you want); then click "Save changes";
4. after clicking "Save changes", the screen will refresh, telling you that the stage has been updated and giving a direct link to the stage near the top of the screen. The avatars, backdrops and props you have assigned to the stage will now appear in the Wardrobe and Image Gallery of that stage (see Section 3.3).
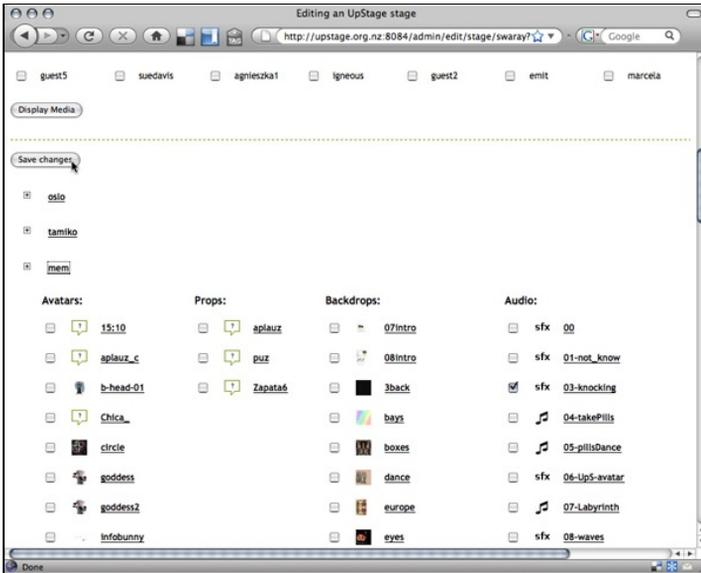
Change name and splash screen message

From the Edit Stage screen you can also edit the name of the stage, and the splash screen message that will appear while the stage is loading, Type the new text in the appropriate places and click "Save changes".

Change background colours

To change the background colour of the backdrops and props galleries, use the colour picker that is below the list of usernames. Click on the colour you want (it will display in the box below the colour picker) and click "Save Background Colour". This change is only visible to players, as the audience do not see these tools, and the main reason for wanting to do it is if your performance has backdrops that go behind the backdrop and prop galleries and make it difficult to see and select the icons.

Note that, in the future, it will be possible to change other background colours here too, including the chat window and the background colour for the entire web page behind the UpStage stage.
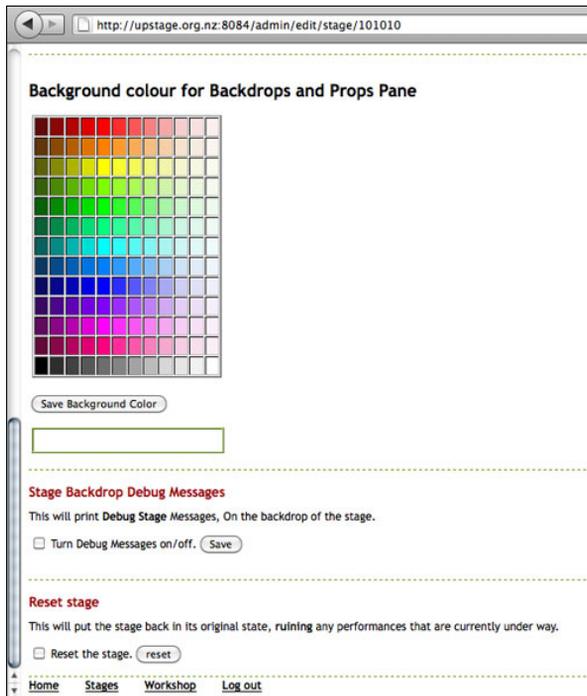
Debug messages

Click the check box "Turn Debug Messages On/Off" and click the "Save" button alongside it. The main reason for doing this is programmers wanting to find bugs, however it has also been used deliberately during performances.

Reset

To reset the stage, click the check box beside "Reset the stage" and click the "reset" button alongside. This clears all the text from the text chat window and returns the stage to its default state; note that it does NOT unassign the media that has been assigned to the stage, but it will restore any changed avatar names to their original name.

If you change the voice of an avatar that is assigned to a stage, it is necessary to reset the stage in order for the changed voice to take effect.

If you need to reset the stage during a rehearsal for some reason, remember to warn everyone that you are doing this, as they will be "thrown off" the stage. The stage will automatically reload, but it can be disconcerting if you aren't expecting it and is definitely not a good idea to do during a performance (unless specifically you want that effect!).

17. UPLOADING MEDIA

Before you begin uploading your media to UpStage, please read the section of this manual "Creating Media".

Media (graphical avatars, props and backdrops, and audio files) is uploaded to UpStage via the Workshop interface. We are currently developing a new interface, as the current system was not designed for the numbers of artists now using UpStage and has become quite cumbersome. We ask for your patience, while we wait for the new system to be ready.

Unless you are a superuser, media uploads are limited to 1MB per file; this is to help avoid the uploading of unnecessarily large files, which will mean that stages take longer to load. Players with superuser permissions can over-ride this limitation.

AVATARS

In the Avatar section of the Workshop, you can upload new avatar images and video streams, delete unwanted avatars, listen to available voices and change an avatar's voice.

Uploading a new avatar

Avatars can be:

- still images in .jpg, .png or .swf format
- multi-frame avatars
- animated .swf files
- motion jpegs from a web cam.

A single avatar can be composed of all .png files, or all .jpg files, or a single (possibly animated) .swf file. Multi-frame avatars can have a maximum of 10 frames (images), all of which must be the same format (either .png or .jpg). There are a number of tricks that will help to achieve the best avatars - see the section on Creating Media for tips on creating graphics for UpStage.

Once you have created your avatar in a graphics application, click on "Add a new avatar" in the Workshop; give it a name (every avatar must have a unique name – UpStage will add a number if you give an avatar the same name as another avatar) and browse to the file(s) on your hard drive. Click OK and the file(s) will be uploaded to UpStage, and you will see the avatar's edit screen. This is where you can select a voice for your avatar (see the chapters on Speech and Text Chat for more information about the voices available on UpStage, and the appendix on Text2Speech Voices for information about how to add more voices).
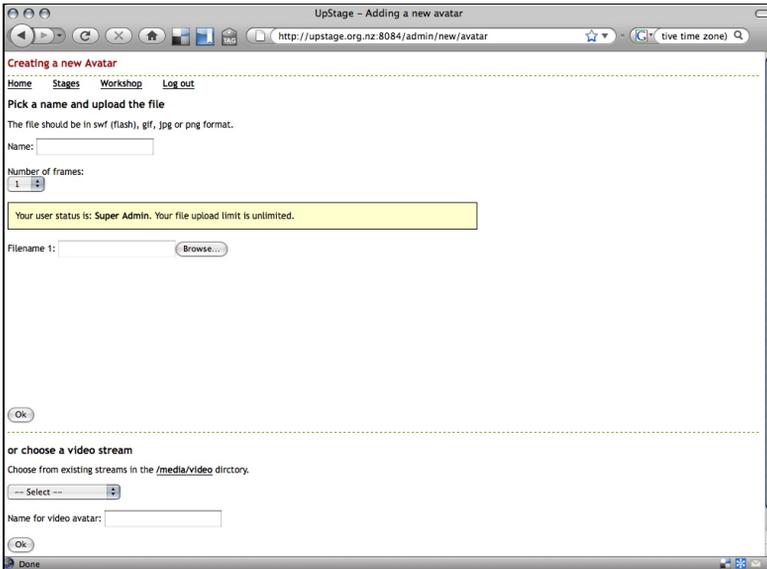
If you are creating a new web cam avatar, you will first need to set up your web cam with FTP access to your UpStage server (see the Webcams chapter for details and recommended software). Once your image or video stream is ready, follow the link from the Workshop to "Add a new avatar" and find your filename in the drop down list of available video streams. Choose a name for the avatar then click OK.

Go back to the Workshop and follow the link to "Manage Avatars" and you will see a list of the stages, plus "unassigned" – this is where you will find your avatar before you have assigned it to a particular stage. It will also appear in the list of avatars uploaded by you when you are in the "Manage Stages" section, allowing you to assign it to a particular stage. Note that there is no limit to how many stages one avatar (or other media) can be assigned to.

Manage Avatars

This screen lets you access information pages for all the avatars on the server, grouped according to the stages they have been assigned to, plus an "unassigned" category for avatars that have not yet been assigned to a stage. Click on a stage name or "unassigned" and then on the name of an avatar to go to that avatar's edit screen.
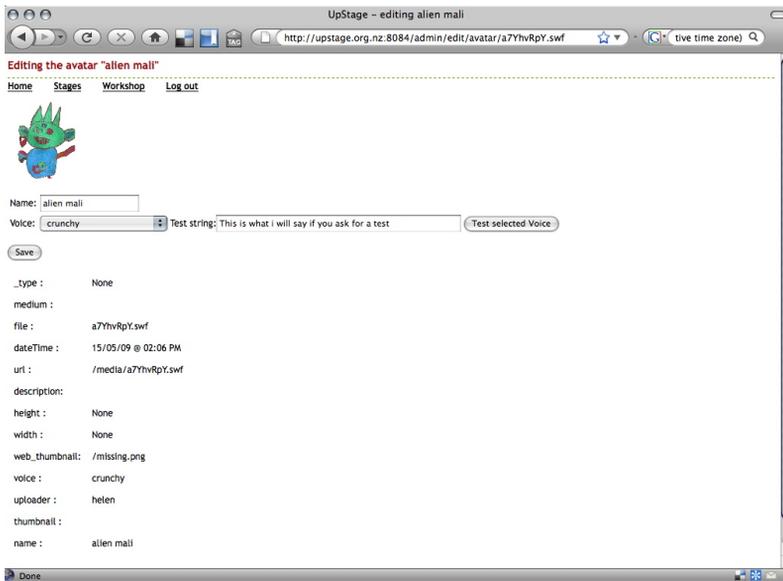
You will see a thumbnail image of the avatar, information about the file, and a dropdown list of available voices. You can change the name of the avatar and its voice, and test the voices to see what they sound like.

PROPS

Props function in a similar way to avatars, but they can't speak, and you must be holding an avatar in order to hold a prop. When an avatar is holding a prop, it appears on stage at the top left corner of the avatar. If another player clicks on the same prop, it will appear to be passed to the second player's avatar. Invisible avatars are useful for placing props on the stage, appearing independently of the visible avatars.

Uploading a new prop

Props are created in the same way as avatars, and should be still images in .png or .swf format; see Section 4 for recommendations about creating graphics for UpStage.

From the Workshop, follow the link to "Add a new prop", and navigate to the appropriate file on your hard drive. Choose a name for it and click OK to upload.

Manage Props

This screen shows a list of available props, grouped according to the stages they have been assigned to; you can change the prop name, and delete unwanted props.

BACKDROPS

Backdrops can be still images in .jpg, .gif, .png or .swf format. See the section Creating Graphics for recommendations about creating backdrops for UpStage.

Uploading a new backdrop

From the "Add a new backdrop" link in the Workshop, navigate to the appropriate file on your hard drive. Name it and click OK to upload.

Manage backdrops

This screen shows a list of available backdrops, grouped according to the stages they are assigned to; you can change the backdrop name and delete unwanted backdrops.

Multiframe backdrops

Multiframe backdrops work in the same way as multiframe avatars – see section 4 Graphics for more information about creating multiframe backdrops. To change the frame of a multiframe backdrop on stage, the command is /b 1, /b 2 etc. and /b 0 to animate the frames.

AUDIO

You can upload MP3 files and assign them to a stage. Up to three audio tracks can be played at simultaneously on a stage (more than three can be assigned to a stage).

Uploading a new audio file

From the "Add new audio" link in the Workshop, navigate to your MP3 file on your hard drive. Name it and select either "Sound effect" or "Music" then click OK to upload.

Manage audio

This screen shows the list of audio files that have been uploaded. You can delete files, or click on the file name to edit its information – you can change the name or the type of file (sound effect or music).

CREATING MEDIA

18. CREATING GRAPHICS FOR UPSTAGE
19. CREATING AUDIO FOR UPSTAGE

18. CREATING GRAPHICS FOR UPSTAGE

Avatars, backdrops and props for UpStage can be created using standard graphics applications such as Gimp, PhotoShop, Fireworks and Flash. The recommended formats for your original graphics files are .swf or .png.

Vector-based images will appear much cleaner than pixel images (such as .gif and .jpeg), as they are resized to match the dimensions of individual screens and browsers. You can use .gif and .jpg but your images will lose quality (note – backdrops are fine as jpegs).

Avatars and props will appear on stage approximately two to three times larger than the original file. This is because the stage is not in a fixed-size window: it allows for different screen resolutions and sizes, and different sizes of browser window. The aspect ratio is 7:3 (see the backdrop diagram below).

The recommended size for the original file for a "standard" sized avatar is approximately 100x100 pixels – obviously you will want bigger and smaller ones but this gives you somewhere to start. In order to test the size of your avatar, you must upload it, assign it to a stage, then look at it on that stage (the same applies to props, and also for backdrops if you are working out what is going to be obscured by the chat window).

It can be a time-consuming process getting your graphics to the size you want, so it's a good idea to make a couple of samples first and then base the rest of your graphics on those once you have got them the size you want (this applies to both props and avatars). If you upload avatars that are not the right size, please remember to **delete the unwanted files**, otherwise the server and Workshop interface get clogged up with unwanted media.

CREATING .PNGS

The .png file format is recommended for avatars and props, rather than .gif or .jpg, as it allows for transparency and gives a good quality image. Files can be saved in .png format in most graphics applications. In the File menu, choose "Save As" and look for the .png option.

Do NOT interlace the file when you save it.

CREATING .SWFS

Although UpStage itself is open source and we've done everything we can to make it cross-everything, it is ultimately delivered to the browser via the Flash Player plug-in[1]; because of this, the most successful graphics format is .swf. To create .swf files, you need the Flash application (note: open source applications that convert other formats to .swf are beginning to be available - if you know of something that works well, please let us know!).

Please note that the following information is by no means a comprehensive Flash tutorial. If you do not know how to use Flash at all, or if the following steps are not clear to you, we recommend that you look on the web for a Flash tutorial.

The basic steps for producing a single frame avatar or prop using Flash is as follows:

- Start with a .png file in which you have clear-cut your image and given it a transparent background. Keep the .png image at a large size – around 500px square for a standard-sized avatar is a good guide, as much larger will result in an unessarily large .swf file but a smaller file will start to lose quality.
- Open Flash and from the File menu, choose Import; navigate to your .png file and import it into Flash.
- Click on the image to select it – a grey border appears around it.
- In the Insert menu, choose "Convert to symbol" – the border will change to a thin blue line.
- Then resize it (Modify > Transform), remembering that avatars and props will increase in size by about 2-3 times when uploaded into UpStage. Around 100 pixels is a good size to begin with if you don't know what size you want.
- Once you have reduced it to the required size, adjust the document size to match.
- From the File menu, choose Export Image. Put the jpeg quality up to 100% and save the .swf file.

ANIMATED AVATARS AND PROPS

UpStage supports both animated sequences and Flash movie clips. When you put sequenced (frame-by-frame, or motion or shape tweened) animation onto the stage it will appear static with the image in the first frame (/a 1). To change to other frames of the animation, type /a 2, /a 3, etc. To make the avatar animate, type /a 0.

If you have saved your .swf as a movie clip animation it does not need any commands, it will automatically loop and can be used on stage either as a continuously looping animation or as a series of still avatars that are swapped using the /a command, as above.

Props and backdrops can also be animated using Flash. But bear in mind that Flash animations can end up as larger files, which will increase the time it takes to load your stage.

To create an animated sequence, follow these steps:
- First create a series of .png files (as above) and give them numbered filenames.
- Open Flash and from the File menu, choose Import and navigate to the first .png file; Flash will ask if you want to import the series, say yes. This will create a frame for each image.
- Going to each frame in turn, click on the image to select it (a border appears around it), in the Insert menu, choose "Convert to symbol" (the border will change to a thin blue line) then resize (Modify > Transform), remembering that avatars and props will increase in size by about 2-3 times when uploaded into UpStage.
- Once the images are all reduced to the required size, adjust the document size to match; if your images are not all exactly the same size make sure you have made the document size as big as the largest image.
- From the first frame, and with the image selected (the blue line should appear around it), go to the Insert menu and select "Create motion tween".
- To check that the tweening has happened, go to the Control menu and hit play – your sequence of images should play.
- From the File menu, choose Export Movie; put the jpeg quality up to 100% and save the file.

Sounds can be embedded into Flash movie clips, but it takes a bit of trickery to be able to control the sound.

When using Flash to create animated avatars and props, be sure to check the the frame rate and whether it is set up to loop. If the frame rate is, for example, 24 fps and it is set to loop, the image will reload 24 times a second, regardless whether anything else is changing on the screen. Making your still flash pictures run at, for example, 1 fps and/or switching off looping will ease the load on everyone's browser. Very slow animation, for example tweened over 40 or so frames and looping, will cause the least strain and can create some very effective movement.

UpStage doesn't cope with movie clips nested within the frames of a Flash animation, but it is possible to import Quicktime movies into Flash and then export as a .swf. You will need to experiment with file sizes and perhaps remove some of the frames from the Quicktime movie in order to keep the size down.

Once again, this manual does not pretend to provide a comprehensive Flash tutorial. Please look on the web for more detailed information on using Flash.

BACKDROPS

As long as the original image is 380x240pp or larger, a backdrop will fill the UpStage screen, including going behind the text chat window. The text chat window has a white background in order to ensure that text is always readable, even over busy backdrops, but this means that the area at the right of your backdrop is covered by the chat window. You may wish to create a backdrop that has a blank area on the right where the text chat window is to ensure that important parts of your backdrop are not hidden behind the chat window.

The proportions of the whole image are:

total width : total height - 10 : 6.2
width of stage area : width of chat area - 7 : 3
minimum width : height – 380 : 240 pixels

This diagram illustrates the proportions of the stage and chat areas (bear in mind that everyone's screen size and browser window size can be different – your backdrop will stretch to fill the space):
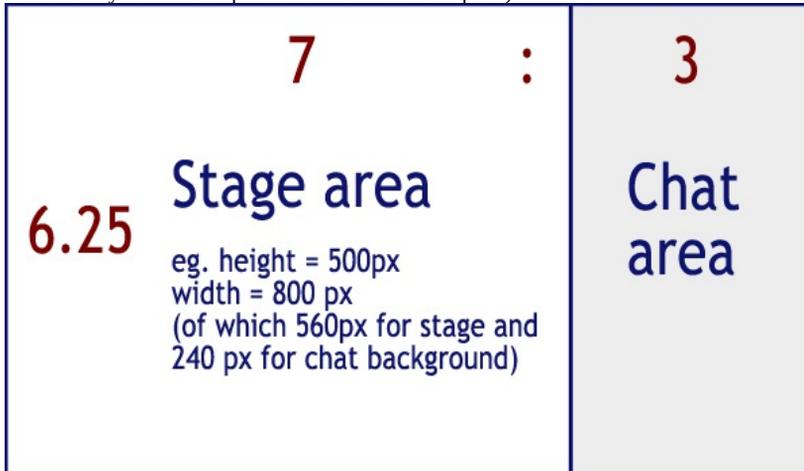
Note that in the Player view of the stage, an strip along the bottom of the backdrop will be obscured by the Backdrop and Prop Image Galleries – but as these tools are not seen by the audience, it is recommended that your backdrop extend below that strip. (TIP: it's a good idea to look at your stage in audience view as well as player view; you can do this while you're working by having it open in two browsers, one where you are logged in and one not.)

Backdrops can be created as .png, .swf, .gif or .jpeg; as with avatars and props, .png or .swf will give the best quality results. Note that .png files should NOT be interlaced when saving. If you are using .gif or .jpeg, upload a test backdrop to see if it's going to be good enough, and remember to delete unwanted images.

When uploading a series of backdrops for a particular show, it's a good idea to give them names that begin with the show name, so that when it comes to assigning them to the stage, they are displayed together in the list. This applies to props and avatars as well.

FILE SIZES

File sizes are limited according to your user permissions: superusers can upload up to 2 MB per file, admins can upload up to 1 MB per file; however this is still quite big and in general you should try to keep your files small. The larger the files you upload, and the more graphics assigned to your stage, the slower the stage will load. Performance after loading may also be affected, although so far it seems that the most noticeable impact is during the initial loading of the stage.

What is a "reasonable" file size for your original graphic? This is very hard to say, as it's completely different for a small static flat graphic prop which may be only 1K, and an animated flash backdrop or multiframe avatar, which could be over 500K. And a stage with a single large graphic may load faster than one with many medium sized graphics.

If your original files are larger than 500K, check whether you can resize them and save them again to a smaller file size. Remember that screen resolution is only 72ppi so there is no need for your originals to be at a higher resolution.

DELETING GRAPHICS

It is important to delete unwanted graphics in order to keep the workshop area manageable. This is done through the "Manage avatars", "Manage props" and "Manage backdrops" screens. Check the box beside any images that you want to delete then scroll up or down and click the "delete selected" button.

You can see on these screens whether an image is currently assigned to a stage; if you try to delete an image that is assigned to a stage, UpStage will ask if you are sure that you want to delete it. If multiple groups are using the same server you should not delete anything unless you are sure no-one else is using it (for example your own test graphics that you no longer want).

If you are working on a server that is used by various people, such as the Open UpStage (http://upstage.org.nz:8084) please do not delete anything that has been uploaded by someone else. But also be aware that we operate a Creative Commons policy, so your media may be "borrowed" by others. No-one should use someone else's media in a performance without the original creator's permission.

ON-STAGE LINKS

Active hyperlinks can be created by typing a URL into the text chat window, eg http://www.upstage.org.nz. Use right-click or ctrl+click to use the link, which gives the options to open the link in a new window, the same window, or to copy the link.

Sometimes it's useful to have a graphic on-stage that provides a hyperlink to another stage or a different web site. The way to do this is to create a .swf image with an ActionScript button containing the following code:

```
on (release) {
        getURL("http://desired.url", "_self");
}
```

This could be an avatar or a prop that is placed on the stage at the time that you want the audience to follow the link.

MORE FLASH TRICKS

If you are experienced in using Flash and Actionscript, you can do a lot more with it in UpStage; most (but not all) interactivity that can be achieved in a web page using Flash, can be achieved in UpStage. The purpose of this manual is not to teach you how to use Flash, but there are some relevant tutorials on the UpStage web site which you may find helpful.

1. An open source equivalent plug-in, Gnash, has recently become available, but it is a media player browser plug-in, not a graphics application; and at the time of writing, appears to be unfeasible for using with UpStage as in its current state it is incompatible with many of UpStage's features. We are also looking into HTML5 as a possible future solution.^

19. CREATING AUDIO FOR UPSTAGE

As well as sound created in real-time by avatar voices, prerecorded MP3 files can be uploaded to UpStage and played via the Audio palette in the on-stage player tools. Prerecorded audio could include music, sound effects, human voices, etc. At this stage, ONLY the MP3 format works (a third possibility for adding audio to your performance is to embed audio in a Flash animation, if you have the skills and ability to do this).

A 1MB file size limit for audio uploads is in place on the UpStage Open Server (8084); this is to ensure that the server doesn't get unnecessarily filled up with enormous files, and that stage load times are not too long and tedious for the audience. Remember that when the audience enters your stage, all of the media you have assigned to the stage will be loaded to their computer before they arrive at the stage; therefore the bigger the files, the longer the load time.

There are many ways to create, convert and compress MP3 audio files; we recommend that you refer to other manuals for more information on this if you are not familiar with it.

APPENDICES

20. GLOSSARY

Here are definitions for some of the terms that are used in this manual. Please let us know if something is missing.

Audience: people present online at a performance, but not logged in. The audience can participate via the text chat, but do not have access to the same tools as the players.

Avatar: a graphical icon that can be held and moved around the stage by a player, and that can speak.

Backdrop: a graphic which fills the stage behind any avatars and props that are placed on it. A backdrop can also extend behind the text chat.

Chatters: the online audience are often referred to as "chatters", as they contribute to the performance via a text chat function.

Cyberformance: live online performance where remote players and/or audience use internet technologies to come together in real time.

Drawing: functionality that allows real time drawing directly onto the stage.

Foyer: the home page of an UpStage server – where the audience can come to see what's on, and where players can log in.

Mirror: the square on a stage that shows a Player which avatar they are currently holding.

Palette: e.g. "drawing palette" or "audio palette" – a set of tools for a particular function.

Player: a logged-in participant in a performance. Players have access to on-stage tools which allow them to manipulate avatars, backdrops and props.

Prop: a graphic which can be held by an avatar or placed on the stage.

Splash screen: a sort of "curtain" that appears over the stage while it loads; the splash screen has a bar to indicate how far through loading the stage is, as well as a welcome message which you can edit and the name of the stage.

Stage: a dynamic web page where you can place and move avatars, props and backdrops to create a performance.

Stage tools: tools visible on the stage to logged-in players (but not visible to the audience) that enable the players to manipulate media on the stage in real time.

Text chat: an input field and text chat window, where avatars' speech and audience text appears and is visible to everyone; the text chat window can be scrolled up and down to read text that has been entered previously.

Tools: the buttons, sliders and icons that allow logged-in players to manipulate media.

Wardrobe: the interface through which players can select avatars on a stage; an alphabeticised and scrollable list of the icons and names of the avatars assigned to that particular stage.

Whispering: silent text communication between logged-in players that is not visible to the audience.

Workshop: the "back stage" interface where logged-in Players can upload graphics, view existing graphics, create and manage stages and manage players.

21. / COMMANDS

When you are on stage, there are a number of commands you can type into the text field to do certain things:

/a 1, /a 2 etc	displays a different frame of an animated or multiframe avatar
/a 0	animates a multiframe or animated avatar
/asize	/asize followed by a number will adjust the size of the audience text in your chat window (note – this only affects your own screen; the text size will not adjust for the audience or other players); the default size is 4. Audience can also use this command to adjust the size of font in their browser.
/b 1, /b 2 etc	displays a different frame of a multiframe backdrop
/b 0	animates a multiframe backdrop
/details	lists the usernames of all players and the number of audience members who are present on that particular stage.
/help	gives you a list of some of these commands
/info	shows information about UpStage including which version of the software you are using
/nick	allows you to change the name of the avatar you are holding – type /nick newname
/license	provides information about the dual GPL and Creative Commons license
/psize	/psize followed by a number will adjust the size of the player text in your chat window (note – this only affects your own screen, the text size will not adjust for the audience or other players); the default size is 4. Audience can also use this command to adjust the size of font in their browser.
/whisper or /wh	allows you to communicate with other players without the audience being aware; the whisper command is explained in Section 1.5
:	typing : before your text will give you a silent thought bubble, rather than a speech bubble and spoken text. The text is blue in the chat window
!	typing ! before your text will make your avatar shout. The speech bubble outline and the chat text is red.

22. TEXT2SPEECH VOICES

UpStage's speech is generated by the Festival Speech Synthesiser, developed at the Centre for Speech Technology Research at Edinburgh University (http://www.cstr.ed.ac.uk/projects/festival/).

An avatar's voice is selected from a dropdown menu when adding a new avatar and changed in the "Manage avatars" section (see section 3.2.3). There are currently about 100 voices on the UpStage server (http://upstage.org.nz:8084); if you are setting up your own UpStage server, please see the technical documentation regarding installing voices.

VOICES CURRENTLY AVAILABLE ON UPSTAGE

The voices currently available with UpStage have a filenaming system that describes what kind of voice each one is. Some of the voices speak English in a foreign accent, some speak English in various English accents, and some are designed to speak other languages. The software defaults to a male voice, but we have endeavoured to make female versions of most voices.

You can test the voices on the Avatar Edit screen, by selecting different voices from the drop down menu and entering the text you want to test.

The format is: ["e" or "emb"] _ [native language] - [en] - [modifications]

For example:

> e_de – speaks and reads German
>
> e_en – speaks and reads English
>
> e_en-fast-f1 – speaks English quickly, in a female voice
>
> e_en-wm – speaks english in a west midland accent.

Other accents in the e_en series are "n" for north, "sc" for Scots, "rp" for RP, "r" for rhotic (which means it pronounces the r in words like church).

> emb_af1 – speaks and reads Afrikaans
>
> emb_af1-en – speaks English in an Afrikaans accent
>
> emb_de4-en-low-slow – speaks english, lowly and slowly, in a german accent

We are in the process of compiling descriptions for all the voices; following is the information so far:

Voice	Male	Female	Accent	Non-Eng	Description
awb_cmu	X		Scottish		Soft, slightly muffled
awb_nitech	X		Scottish		Clear, not very deep
bdl_cmu	X		English?		A little bit quavery
bdl_nitech	X		English?		Firmer than bdl_cmu, a bit higher, but clearer
bud	X		NZ?		Deep, calm
clb_nitech		X	NZ?		Robotic, soft
crunchy					Crunchy - good for witches & effects
default		X	NZ?		Smooth, young
e_en-fast-f1	X		NZ?		fast, boyish

e_en-r-f3	X		NZ?		fast, boyish
e_en-wm-slow	X		Australian??		nasal drawl
e_en-wm-slow-f3	X		Australian??		boyish nasal drawl, computerish & like a learner-reader reading
e_eo	X			foreign	
emb_de4	X		German	German	neutral German male
emb_de4-en	X		German		mid-range, clean, English w/German accent
emb_de4-en-low-slow	X		German		pimp's voice: low & lecherous (English w/German accent)
emb_de5	X		German	German	slow low somewhat distorted voice
emb_de5-en	X		German		slow high somewhat distorted voice, English w/German accent
emb_de5-en-high-slow	X		German		mid-high slightly strangulated male, English w/German accent
emb_de7	X		German	German	middle somewhat slow and drawn out male, German
emb_en1-high	X		English		soft mid-range male voice
emb_fr1-en-low	X		European		low & lecherous
emb_fr4-en-high-slow	X		European		mid-high male voice, sounds like he has trouble speaking
emb_hu1-en-slow		X	European?		low soft female voice with slight European accent
emb_nl2	X			Dutch	mid-low male
emb_nl2-en	X		European?		mid-low male voice with slight European accent
emb_pl1		X		Polish?	mid-low calm female
emb_pl1-en		X	Polish?		mid-low calm female with European accent
emb_ro1-en	X				
emb_sw1-en-fast	X		Swedish?		mid-low male speaking quickly
emb_sw2-en-high-slow		X	Swedish?		mid-high female with European accent
high	X	X	Computer		boyish computer monotone
rms-faster	X		American		
rms-nitech	X		American		Deeper than roger, clear, little bit emphatic
roger	X		English		Thin, proper-sounding, not deep
slow	X		computer		gets slower & lower, very good for effects
slt-cmu		X	American		Flat, slightly muffly
slt-nitech		X	American		Flat, a bit clearer & stronger than slt-cmu

ADDING MORE VOICES

You can install additional speech plug-ins on your own server to extend the range of voices available to the avatars. As long as you don't mind messing around with the sourcecode a little bit it's not difficult – Patricia Jung explains how she did it (for Linux, using UpStage V1 - note that this is now several years old):

> Just add another entry in the VOICES section in Upstage/upstage/voices.py like:

> #txt2pho/mbrola:

> 'de1': ("| /usr/local/mbrola/pipefilt | /usr/local/mbrola/preproc /usr/local/mbrola/Hadifix.abk /usr/local/mbrola/Rules.lst | /usr/local/mbrola/txt2pho -p /usr/local/mbrola/data/ |/usr/local/mbrola/mbrola /usr/local/mbrola/de1/de1 - -",

> _fest),

> I know, it looks awful but this is only because the command is an awful chain consisting of four commands with a couple of options each and the relevant path:
> "| pipefilt ...| preproc ... | txt2pho ... | mbrola ..."

It does some preprocessing (like exchanging all appearances of "z.B." with "zum Beispiel"), then hands the resulting text over to txt2pho and to mbrola.

As long as your command or command chain takes text input from the standard input and outputs the result as sound in raw format on the standard output chain (Unix stuff, ask me if you haven't heard about it) you can put whatever you like in between the "| and the ".

The above mentioned awful command chain will work when one has installed the txt2pho frontend; it uses the de1 female mbrola voice, and you can choose it in the web interface using the name de1.

The only problem with this kind of reconfiguration is: As config.py isn't a nice configuration file but a python script one needs to know at least that python is very picky about vertical alignment: It's extremely important that your new voice entries have the same amount of whitespaces at the beginning of the line as the other voice entries.

The reason it took me so long was TTS: I failed completely and utterly in making the German festival extensions for use with mbrola voices:

http://www.ims.uni-stuttgart.de/phonetik/synthesis/festival_opensource.html

work. Then I tried txt2pho with mbrola:

http://www.ikp.uni-bonn.de/dt/forsch/phonetik/hadifix/HADIFIXforMBROLA.html

(http://bogmog.sourceforge.net/document_show.php3?doc_id=34 has a nice installation description), ignoring festival, and this worked at once.

23. TROUBLESHOOTING

UpStage is a work in progress: it is being maintained and developed by volunteer programmers, which means that things happen but sometimes slowly, and sometimes things break as we go. We welcome input from anyone who has the time and skills to work with us on the development of UpStage - please visit the SourceForge site for more information, and join the developer's list.

If you encounter a problem that isn't listed here, or that you still can't find an answer to, please:

- check the FAQ page on the UpStage web site, maybe there's an answer there;
- visit the bug tracker on SourceForge to see if it's something that we're working on (if it is, please add comments as more information can help to find a solution);
- contact the UpStage team - we will try to help.

BROWSER PROBLEMS

We are constantly monitoring browser compatibility, so if you experience problems connected to your choice of browser, please contact us.

If you are having browser problems, we recommend the following:

- ensure that you have at least version of the Flash player installed;
- close your browser window, open a new window and log in again. If you still have problems after doing this, quit your browser application and restart it.

STAGE WON'T LOAD

If the stage fails to load properly, and the splash screen remains over the stage with the message "Couldn't load all images", this could mean that there is a corrupted image assigned to the stage.

The first thing to do is try reloading, as it could just have been a blip in the data flow; either use the "reload" button on the splash screen, or use the back button in your browser to return to where you can from and click on the link to the stage again.

If this doesn't work, you may need to remove a rogue image from the stage. If you had just assigned a new graphic to the stage before you encountered this problem, then that is most likely to be that one that's causing the problem. Try unassigning that image from the stage, and see if it will load.

If you don't know which image it is, you may need to take everything off the stage and reassign them one by one or alternatively, delete the stage and make a new one.

FONTS LOOK BAD

If an .swf file has been saved as low quality (in the original file), it can force the whole stage to appear "low quality". This can be changed by right-clicking (on a Mac, ctrl+click) on the stage, and selecting "Quality" from the menu that appears. If Low is selected, change it to High and you will see that the fonts now display properly.

However, this will only correct the problem on <u>your</u> machine; your audience may not know how to change the quality. A better solution is to work out which image is causing the problem, delete it and resave the original file as high quality.

LINUX FONTS

If you are using UpStage on Linux you may find that fonts are not appearing on stage. This problem is fixed by installing additional packages:

- apt-get install gsfonts gsfonts-x11
- and
  http://www.macromedia.com/shockwave/download/download.cgi?
  P1_Prod_Version=ShockwaveFlash&P2_Platform=Linux&P3_Browser_Version=Netscape4
  untar/gzip
- close all browsers, run the installer (see installation instructions on the url above)

OTHER PROBLEMS

UpStage is a work in progress, and it is an open source development. We use SourceForge to track bugs – please visit http://sourceforge.net/projects/upstage/ to see what bugs and features we are currently working on.

The UpStage web site – www.upstage.org.nz – has FAQs and notification of any immediate or temporary problems. Please check there if you are experiencing problems.

If you have any other problems or suggestions, please contact us and we will endeavour to answer your questions and solve any bugs.