



Clipstream

Playerless video and audio streaming

Clipstream™ Live Information Guide

Disclaimer: All content presented herein is subject to change without notice and is deemed as accurate as possible at time of publication. Please consult with Clipstream™ Support at <http://clipstream.com/help/> for clarification if you encounter any erroneous or inconsistent material in this document.

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1.0 Introduction to Clipstream™

Clipstream™ is superior streaming technology, without the hassle of installed players or expensive server technology. Clipstream™ uses powerful compression, decompression, and reproduction processes to take advantage of the Java platform to deliver high quality streaming audio and video of any length in time. Clipstream™ uses standard, widely available and implemented Internet serving and viewing hardware, software and protocols to present its ultra small Java applets. In addition, Clipstream™ utilizes a quick and intuitive creation process that simplifies the task of implementing streaming media in a web page, email, banner advertisement or Internet application.

Clipstream™ Live is streaming software that enables you to deliver live video through the web or email. Once installed, Clipstream™ Live takes your PC and turns it into your broadcasting station. Clipstream™ Live requires a dedicated PC or server to handle the simultaneous video capture, encoding, and delivery. There are no special computer hardware requirements, although a more powerful machine and larger Internet connection will allow you to maintain a larger number of concurrent viewers.

To make life easy, Clipstream™ Live will let you edit most of the popular settings right within the application. For advanced users, you can further customize Clipstream™ to meet your requirements. In addition, there is a Clipstream™ Live Repeater available to allow low bandwidth and remote Clipstream™ Live broadcasters to be re-broadcast to their service providers to allow greater numbers of viewers.

2.0 Clipstream™ Live Information

2.1 **Clipstream™ Live Components:**

1. Clipstream™ Live
2. Clipstream™ Live Repeater (*additional product for large audience reach requirements*)
3. PC
4. Video Capture Device
5. Internet Connection - Bandwidth

2.2 **Clipstream™ Live**

A simple windows application that recognizes a properly configured windows video source and converts the source to the Clipstream™ video format. When initiated, the application creates a mini web server on a net connected PC to stream the Clipstream™ video signal. To view the live video, users browse to the IP of the server, or to a page that code bases the applet code. Clipstream™ Live can be customized to support a variety of bit rates beyond what is indicated in the available menus.

2.3 **Clipstream™ Live Repeater**

Another simple windows application that, when initiated, creates a mini web server on any net connected PC that “tunes in” to a specific Clipstream™ Live stream. The Repeater then re-streams the signal using the PC’s available bandwidth. Required for large audience reach broadcasts.

2.4 **PC**

Clipstream™ Live is a PC based Windows only application.

Minimum requirements for running Clipstream™ Live are:

CPU: P3 450MHz
RAM: 128M
HD: 2Gig
CONN: Broadband
NIC: 10 Mbps
OS: 9x/NT4/2K/XP
JVM: MS JVM 5.0.0.3802
DirectX 8.0 or higher

Recommended requirements for running the Clipstream™ Live:

CPU: P3/P4/Althon 2GHz
RAM: 512M
HD: 2G
CONN: T1 or better
NIC: 100 Mbps (Server NIC)
OS: 2K/XP
JVM: MS JVM 5.0.0.3802
DirectX 8.1 or higher

2.5 Video Capture Device

Clipstream™ Live will not operate if a Video Capture Device is not properly installed and configured on your Windows based PC. Video Capture Devices can be as simple as a USB web camera, or as complex as an expensive Matrox video capture card. An expensive capture card is not recommended for most live broadcasts. For example, the card used by Destiny for the live stream on the www.clipstream.com site uses a \$69CAD PCTV card. That said, however, the rule always applies that the better quality in, the better quality out.

Quality improvements apply more to Web cameras. There is a definite difference between the picture qualities of a decent USB cams compared with the cheaper brands.

Below are a few known and tested Cameras, PC Connections, Video Capture cards and Hardware options for you to consider.

2.5.1 Cameras Tested

- D-Link DSB-C100 100K Pixel USB PC Camera
- Canon MV450 DV 8mm 100X digital
- Canon XL1S via Firewire
- Canon XM2 via PCMCIA-FireWire 32bit cardbus Hamlet
- Camera boat, mtb, surf, helicopter
- Logitech Quickcam Pro 3000 Web Camera via USB
- Logitech USB QuickCam for notebooks Pro
- Microcamera Sony 8x3 CM autozoom, autofocus, angle 45°/99°
- Prochips
- X10 wireless camera system
- XRLink IBM PC Camera

2.5.2 PC Connections Tested

- USB
- Firewire
- PCMCIA card (notebook)
- PCI (Video Capture Card)

2.5.3 Video Capture Cards Tested

- ATI TV Wonder Series (3rd party TV tuning software needed)

2.5.4 Other Hardware

- HARDWARE VIDEO Transmitter
- Antenna 10H amplified
- Transmitter5X3 CM 1,200 GHZ

2.6 Internet Connection - Bandwidth

As with all of Destiny's technologies, quality is determined by a balance of a number of items – your net connection being a very important item for both serving (repeating) and viewing Clipstream™ Live.

Your available bandwidth determines how many people will be able to view your live stream at a mixture of bit rates. In the simplest case, where you are only delivering 1 bit rate, you can simply divide your available bandwidth by your bit rate to determine how many people should be able to view your video at any given point in time.

In more complex situations with multiple bit rates available, your total available bandwidth is divided by a blend of the bit rates – however, this is very difficult to calculate accurately as the number of permutations of bit rate combinations is large. Limitations on available serving bandwidth can be supplemented by using the repeater application.

The implications of available bandwidth for the viewer are the same as with regular Clipstream™ Video.

While just about any net connection should be able to stream, for good quality and a minimum amount of viewers we recommend:

- Upstream/upload 128kbps connection (cable, DSL or above).
- 500k upstream/upload recommended

Calculations

If you are broadcasting a live event over a T3 (45,000 kbps) at 128kbps, you will be able to support approximately 350 viewers.

$$45,000\text{kbps} / 128 \text{ kbps} = \sim 350 \text{ viewers}$$

Conversely, that same broadcast over a T1 (1,544 kbps) at 128kbps may support 12 viewers.

$$1,544\text{kbps} / 128 \text{ kbps} = \sim 11 \text{ viewers}$$

2.7 Key Technical Points

- Server and Repeater are Windows only.
- If you are familiar with Clipstream™ Video or Clipstream™ Audio, the Clipstream™ Live applet operates almost identically to regular video applet. Some obvious parameters and java methods such as those enabling FF and RW are not supported.
- Live servers must be externally viewable on the Internet to work. Intranet Licensing is different than Internet licensing.
- Multiple live servers and repeaters can be run on a single PC. Multiple Servers not recommended.
- Maximum screen size is currently 320x240 (can be enlarged via pixel duplication).
- A Clipstream™ Licensed Code Key is required. Please contact Destiny for licensing options, information and purchasing.

3.0 Installation and Broadcast – 5 Easy Steps

3.1 PC Preparation

Although Clipstream™ Live has been designed to be extremely easy to setup and use, there are a few items that you need to be sure are properly installed and configured on your computer. Some of these items you may already have, and some you might need to add.

Here is a short list of what you need to have available, installed and configured as per their manufacturer's specifications:

- A Pentium II or better PC with a minimum of 64 MB ram (the more CPU power and ram you have the better)
- Windows 95 or higher
- An Internet connection
- A video capture device (card or pc/web cam)
- A soundcard
- DirectX 8.1 or higher (<http://www.microsoft.com/windows/directx/default.aspx>)

Assure that all the above conditions are met before installing Clipstream™ Live.

3.2 Installation

Clipstream™ Live is easy to download and install. The downloaded zip file (ClipstreamLiveServer.zip) includes:

- Clipstream™ Live License Agreement
- Quick Start - Technical Guide
- Basic Information Guide
- ClipstreamLiveInstaller.exe - Run this program to install Clipstream™ Live.

Once you have downloaded Clipstream™ Live (ClipstreamLiveServer.zip) your hard drive and unzipped the files into the same directory, simply double click the Clipstream™ Live installer application (ClipstreamLiveInstaller.exe) to begin the install.

If you don't have DirectX (DirectX 8.1 or higher) installed you will be prompted to install it prior to continuing the installation. In addition, the installer will also ask you if you have a video capture device installed. If you do not, you will still be able to install the application, but it will not run without a video device attached and properly configured. The same holds true for your audio input.

Once you have satisfied the install conditions, we recommend allowing the Clipstream™ Live installer to install the application to the default folder with the default settings. Once the install has completed, icons will be added to your desktop and quick launch bar (if available) and a new program group will be added to the start menu.

3.3 Configuration

3.3.1 Launch – Open Clipstream™ Live

Open the Clipstream™ Live application by clicking on one of the icons or by selecting Clipstream™ Live from the Clipstream folder in your start menu.

When the Clipstream™ Live opens, you should see whatever your camera is pointing at. If you do not, then go back to step one and make sure everything is installed correctly and turned on.

3.3.2 Configuration of Clipstream™ Live

There are only a few settings you will need to make:

- a) Camera Name: Give your camera a name. Any name will do. By giving your camera a name, others will be able to find you.
- b) Bit Rate(s): Under the *Live Streams* drop down menu, select which streams (bit rates) you would like to have available. There are three quick stream options

available. Just click beside the ones you want. Selected streams will have a check mark beside them. Additional configuration of streams is possible through the .ini file or contact Destiny's Help Desk.

- c) License Registration Code: If you have a Licensed Code Key from Destiny, click on the help drop down menu, and select Registration. In the box marked Registration Code, enter the code you were given and click OK.

3.4 Start Broadcasting

This is the easiest part. Click the Start/Stop button.

3.5 View Live Streaming

3.5.1 View the Live Broadcast

To view your live stream, click the *Live Streams* drop down menu and select *View Web Page*. Your browser should open and your live stream should be presented.

3.5.2 Send the Live Broadcast to others via Email

To send an email of your broadcast to your intended audience, click the *Live Streams* drop down menu and select *Email Camera Link*. Your email client should open an email with an email indicating the following:

You have been sent a link to a Clipstream Live video camera!
Camera Name:
Click here to view: http://_____

3.5.3 Embed your live broadcast into a web page

To place the live stream on a web page on another server, simply take the applet code produced by the live as shown in the *View Web Page* (Section 3.5.1) (From Internet Explorer, View, Source) and cut and paste the applet code into the HTML of the page where you wish the live stream to appear. In order for the streamed signal to appear, a simple modification to the Clipstream Live applet code must be made to the new HTML page. **DO NOT** change the live.html page on the CPU running the Clipstream Live Repeater. This modification is as follows:

ADD the segment `codebase="http://64.251.90.15:8080/"`

REPLACE `http://64.251.90.15:8080/` with the IP Address of **YOUR** Repeater.

The result should look something like this:

```
<applet MayScript archive=clipstreamlive.zip cabbase=clipstreamlive.cab  
codebase="http://64.251.90.15:8080/" code=clipstreamlive.class alt=ClipstreamLive  
name=clipstreamlive width=240 height=192>
```

If you have done everything correctly, you should now see the live stream on your web page.

4.0 Advanced Configuration

4.1 Broadcast Bit Rate Control

Clipstream™ Live has 3 options for your bit rate settings which correspond to the bit rate that your viewers can see. If you don't have a lot of bandwidth from where you are broadcasting, you may elect to only select the 40K stream so that more users can see your broadcast.

- 40K (Modem Stream)
- 128K (DSL/Cable Stream)
- 256K (LAN Stream)

Of course, as you increase the bit rate, the higher the quality of your live broadcast. If these standard settings are not suitable for your application, it is also possible to customize the settings by referring to Section 4.2.

4.2 Custom Bit Rate Settings

The standard bit rate settings may not be suitable for your broadcasting requirements. Clipstream™ Live allows you to change the “live.ini” to meet your specific broadcasting needs. Simply go to C:\Program Files\Clipstream\Clipstream Live directory and open the “live.ini” file. Here are the standard streams:

```
[Live Streams]
Stream1=live044.vcs
Stream2=live128.vcs
Stream3=live256.vcs

[live024.vcs]
AspectRatio=1
QualityMin=15
QualityMax=40
Width=160
Height=120
FPS=0.5 fps
AudioBPS=10k
TotalBPS=24k (Modem 28k)
Name=live024.vcs

[live044.vcs]
AspectRatio=1
QualityMin=15
QualityMax=40
Width=240
Height=176
FPS=1 fps
AudioBPS=12k
TotalBPS=44k (Modem 56k)
Name=live044.vcs

[live128.vcs]
AspectRatio=1
QualityMin=15
QualityMax=40
Width=240
Height=176
FPS=5 fps
AudioBPS=20k
TotalBPS=128k (Broadband)
Name=live128.vcs

[live150.vcs]
AspectRatio=1
QualityMin=15
QualityMax=40
Width=256
Height=192
FPS=5 fps
AudioBPS=12k
TotalBPS=150k (Broadband)
Name=live150.vcs

[live256.vcs]
AspectRatio=1
QualityMin=15
QualityMax=40
Width=240
Height=176
FPS=10 fps
AudioBPS=20k
TotalBPS=256k (Broadband)
Name=live256.vcs
```

The **[Live Streams]** identifies the bit rates that the standard Clipstream™ streams. You can easily add a new line item called: Stream4 and so on. For example, assume you have a lot of bandwidth and want to broadcast a higher quality event to some business customers who have 500K capabilities. Here are the changes that you would make:

Add One Line Item	Add
[Live Streams]	[live500.vcs]
Stream1=live044.vcs	AspectRatio=1
Stream2=live128.vcs	QualityMin=50
Stream3=live256.vcs	QualityMax=95
Stream4=live500.vcs	Width=320
	Height=240
	FPS=15 fps
	AudioBPS=20k
	TotalBPS=500k (Broadband)
	Name=live500.vcs

The Live Streams menu will not show the new addition, but it will broadcast at this bit rate automatically as Clipstream™ will auto detect the viewers bandwidth.

There are numerous settings for the new streams, but you can also change the settings of your existing streams. Here is a general review of the variables for guidelines.

4.2.1 Frame Size

- Keep in mind that the larger the size, the poorer the quality will have to be.
- 4:3 aspect is consistent with standard television size / 16:9 aspect is common for films
- For larger frame dimensions, the quality and frame rate will need to be lowered for a quality stream.
- To avoid blocky artifacts in your *.vcs file, be sure to keep the dimensions divisible by eight; even if it doesn't *exactly* match the source file's aspect ratio.
- The chart below is only a *general* guideline for reasonable frame sizes at different connection speeds:

Bit Rate	28k	56k	100k	150k	200k	300k	500k
Frame Size	160x120	176x136	200x152	240x176	288x216	304x224	320x240

4.2.2 Frame Rate

For faster frame rates, the frame size and quality will need to be lowered for a quality stream. High frame rates can affect CPU usage and reduce playback quality on slower computers. We recommend a maximum frame rate of 10 fps.

- Guidelines for reasonable frame rates for different connection speeds:

Bit Rate	28k	56k	100k	150k	200k	300k	500k
Frame Rate	.5 to 2	1 to 5	3 to 6	5 to 10	6 to 10	8 to 12	8 to 15

4.2.3 Quality

Setting the quality too high can affect the streaming.

- Setting the quality below 20 is not recommended.
- The plug-in will attempt to meet the Quality setting that you select for the specified Data Rate. If the Quality setting cannot be met, the plug-in will lower the setting automatically by as much as one third. (the quality will generally fluctuate between your selected setting and one third of that; minimum 5)
- If the specified quality cannot be met at a certain data rate, the plug-in is forced to start skipping frames.

Bit Rate	28k	56k	100k	150k	200k	300k	500k
Quality	20	30	45	40 to 55	40 to 60	40-75	70-95

4.3 Applet Options

Applet settings can be customized by also editing the .ini file or in the actual applet code on the web page. Here are the standard applet features in Clipstream™ Live.

```
[Web Applet Settings]
AutoPlay=True
FrameBuffer=4
BufferSize=1
BackgroundColor=#FFFFFF
TextColor=#000000
PanelEnable=1
PanelFlash=2
PanelPopup=0
PanelPosition=1
```

TitleImage=
EndImage=
NoJavaImage=
NoJavaText=Clipstream Live requires Java enabled in your browser or email. Click here for more information.
CustomParam=<VideoTitleImageURL=title.gif>,<VideoEdgeColor=#FFFFFF>

5.0 **Support**

Clipstream™ Live is very easy to use, however, you may encounter challenges along the way. Here are a few pointers for streaming your live event:

5.1 **Pointers and Check List**

1. Did your web camera (camera) function correctly before you installed Clipstream™ Live?
2. Did your microphone function correctly before you installed Clipstream™ Live?
3. Is Direct X 8.1 (or higher) installed?
4. Are you trying to install Clipstream™ Live on a non-Microsoft operating system?
5. Are you connecting to the Internet with a router, if so you will need to configure the router to redirect Clipstream™ Live traffic to the appropriate internal server (computer using the Clipstream™ Live).

5.2 **Support**

If you require technical support, there are several Destiny Help Desk alternatives available.

- Send email to initiate a support ticket: ticket@dsny.com
- Online help Index: <http://www.clipstream.com/help/index.shtml>
- Support Forums: <http://support.dsny.com/forum>
- Support Source: <http://support.dsny.com/>
- Register for the Help Desk Account: <http://support.dsny.com/cgi-local/perldesk/pdesk.cgi>

6.0 **Destiny Media Technologies**

Destiny Media Technologies, Inc. (<http://www.dsny.com>) is a leader in developing easy-to-use tools and enabling technologies to distribute digital media through the Internet.

The company's suite of streaming and downloadable products includes: MPE™ (<http://www.destinympe.com>), a complete, secure media distribution system that provides e-commerce and digital rights management directly from within an MP3-compatible multimedia file; Clipstream™ (<http://www.clipstream.com>), a java-based tool which enables web pages, e-mail and banners to stream audio and video without the use of a player; and the RadioDestiny Broadcaster™ (<http://www.radiodestiny.com>), which allows a user to webcast live or scripted internet radio from a computer to anyone on the Internet.

Established in 1991, the company is headquartered in Vancouver, Canada. Destiny Media Technologies is traded as DSNY on the OTC:BB.

6.1 **About Clipstream™**

Clipstream™ is superior streaming audio and video, without the hassle of installed players or expensive server technology. Clipstream™ uses powerful, patent pending compression, decompression, and reproduction processes to take advantage of the Java platform to deliver high quality streaming audio and video of any length in time. Clipstream™ uses standard, widely available and implemented Internet serving and viewing hardware, software and protocols to present its ultra small Java applets. In addition, Clipstream™ utilizes a quick and intuitive creation process that simplifies the task of implementing streaming media in a web page, email, banner advertisement or Internet application.

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To make life easy, Clipstream™ Live will let you edit most of the popular settings right within the application. For advanced users, you can further customize Clipstream™ to meet your requirements. In addition, there is a Clipstream™ Live Repeater available to allow low bandwidth and remote Clipstream™ Live broadcasters to be re-broadcast to their service providers to allow greater numbers of viewers.

6.2 Clipstream™ Video

Clipstream™ Video is a fast, affordable, easy to implement video solution that enables over 90% of web surfers to view your video message without having to rely on external player applications or bulky plugins. Web marketers, advertisers and webmasters will appreciate how easy it is to stream compelling video to their viewers without the need of special servers, software or programming knowledge.

Clipstream™ Video uses unique audio/video compression, decompression, and reproduction process to take advantage of the Java application delivery mechanism to deliver high quality streaming video. Clipstream™ Video leverages the power of the Adobe Premiere application to simplify the video encoding process. In addition, a stand-alone Clipstream™ Video Encoder allows for easy, efficient, encoding of your digital files.

6.3 Clipstream™ Audio

Incorporating the same fundamental benefits and core technology as Clipstream™ Video, Clipstream™ Audio is widely accepted as the software to provide audio navigation, music previews, speeches, help pages and so on.

Clipstream™ Audio has been designed to eliminate the problems associated with web audio, allowing anyone with a modicum of web page building experience to use their existing skills, hardware and infrastructure to place effective streaming audio on any web page, email or banner advertisement. A player is no longer required in order to reach your target audience!

6.4 Clipstream™ IVR Server

With cutting edge Clipstream™ IVR Server technology, you can easily record an audio message on the telephone and upload that message to a web page, email or another HTML location.

You can record a single message, and send that powerful audio message to hundreds or even thousands of your employees or customers in an email. The Clipstream™ IVR server is designed to record audio via a telephone capture card using pre-recorded audio prompts, encode the recorded audio in Clipstream™ format, output the Clipstream™ audio files to a specified folder on a network accessible drive, and instigate a CGI or application when new audio files have been saved. The Clipstream™ IVR Server software package enables you to add the CPU, telephone capture card, network connection, telephone lines and any scripting required to integrate the Clipstream™ IVR system into your site or service.

6.5 Contact Information

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Support: support.dсны.com



Thank you for choosing Destiny's Clipstream™ Live as your playerless live streaming solution.