



# Clipstream

*Playerless video and audio streaming*

## Clipstream™ Video 2.2 Technical Guide – Section 15 Serving

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## Section 15 - Serving

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## Serving Clipstream Video

Contrary to other streaming solutions, the basics of serving Clipstream Video streaming audio are just that – Basic. To serve Clipstream Video you need nothing more than a typical web server. Whether it is an NT server, a Netscape Server, Unix, Linux or Mac – it does not matter. We have even successfully implemented Clipstream Video on a Lotus Domino Server. No special configuration, hardware or software is usually needed. There is really only one thing that must be remembered when serving Clipstream Video:

The videoclipstream.zip file, and any files used by the applet (such as the .vcs files) must be located on the same server. This is a Java security feature that we have no control over.

### **Uploading Necessary Clipstream™Video Files**

For Clipstream™Video to work from a web page you need to upload the following files.

1. Your web page with the Clipstream™Video code embedded in the desired location.
2. The Clipstream™Video player applet: Videoclipstream.zip  
*DO NOT UNZIP THIS FILE.*
3. Your encoded .vcs Clipstream™Video video files. Include all the .vcs files that you intend to stream.
4. Your interface graphics: This includes your bookend images and your button image for the player control panel graphics.

**NOTE:** It is not necessary to upload everything to the same directory as long as the locations of these files are specified in the Java code. If these files are moved at a later time, the video will likely not play properly or not at all.

### **File Size Estimations / Storage Considerations**

When designing a serving solution for Clipstream Video, it is important to take into account the amount of storage space that will be needed for your Clipstream Video files. The following formula is only an approximation, since the number of variables that effect Clipstream Video file size are many, including frame size, frame rate, color depth, streaming rate, audio quality, etc.

The following equation can be used for approximation purposes:

Connection speed bit rate (kbps) x file length (seconds) / 8 = file size (kb)

For example:

A 2.5 minute clip at modem speed (40kbps) would be no larger than 750 kb  
 $150 \times 40 / 8 = 750$

### **Bandwidth Usage Estimation**

Calculating bandwidth usage and maximum concurrent viewers possible is fairly simple, and is mainly dictated by the power of your server hardware, and you bandwidth available. Assuming that your hardware can serve 100% of the bandwidth available, the equation is simply the available bandwidth divided by the mixture of bit rates being served. It is difficult to estimate exactly what

mixture of bit rates will be accessed at any given point in time, so it is better to take an average, or most popular bit rate and divide that into the available bandwidth.

For example a T1 connection at 1,500 kbps of data transfer could support 37.5 56k Clipstream Video modem viewers.

$$1,500 \text{ kbps} / 40\text{kbps} = 37.5$$

### Registering Mime types

In some cases, a server will have mime types restricted, or even not registered. This is usually to prevent certain file types from being accessed from the server for various maintenance, procedure and security issues.

Clipstream Video requires that its mime types be registered with the server, or that the server allow any mime type. In short, the server must have the mime types for the extensions .vcs and .zip registered. In most cases the server will support these mime types automatically. The best thing to do prior to implementing any of these changes is to simply post a Clipstream Video clip to a page and try it out. If you know the file is on the server, yet the clip will not play (a *cannot find file* error dialog should be displayed in the browser in most instances), then try registering the mime types as follows:

#### Most Servers

On your server, add two lines to the .htaccess file:

```
AddType video/x-javaclip zip
```

```
AddType video/x-javaclip vcs
```

Once completed, make sure you can type in the URL of each file (.vcs, .zip) in the browser and get something to download.

#### Apache Servers

```
AddType
```

```
Syntax: AddType mime-type extension extension...
```

```
Context: server config, virtual host, directory, .htaccess
```

```
Override: FileInfo
```

```
Status: Base
```

```
Module: mod_mime
```

The AddType directive adds to the list of filename extensions that filenames may end in for the specified content type. Mime-enc is the mime type to use for documents ending in extension. After content encoding and language extensions have been removed.

Example: AddType image/gif GIF

It is recommended that new mime types be added using the AddType directive rather than changing the TypesConfig file. Note that, unlike the NCSA httpd, this directive cannot be used to set the type of particular files.

## Firewalls / Proxy / IP Issues

Firewalls and proxy servers frequently cause problems for many Internet applications. Clipstream Video is no exception.

If a firewall/proxy prevents Clipstream Video content from being served or viewed it is best to first check with your network administrator to ensure that .zip files and/or java is not being blocked. If so, then have the network administrator assign permissions for these specific items.

When encountering a Proxy Server using Microsoft Internet Explorer, the Clipstream Video applet will load and show the buttons but will not play because it fails the IP check (proxy servers frequently cannot resolve an IP address form a named URL). With Netscape, it won't even load the applet via the proxy. Using an absolute URL in CODEBASE and VideoURL parameter solves all the problems. For example:

```
<APPLET CODEBASE="http://255.255.255.255"  
ARCHIVE="videoclipstream.zip" CODE="videoclipstream.class" ALT="The  
Clipstream Video player" NAME="videoclipstream" WIDTH="87"  
HEIGHT="45">
```

Web sites with non-static IP addresses cannot use this method. Since the IP address changes all the time, they cannot use the IP address in the URL. In this instance, people behind a proxy without external IP resolution will not be able to listen. A solution is currently being investigated.

## Code Keys – Development/Staging/Production Environments

Medium to large sites most often adopt a multi-tiered environment for web site development consisting of a Development Server, a Staging Server, and a Production Server. When Clipstream Video is being implemented into such an environment, a typical code key may not work properly, since each server will likely employ a different IP address. This becomes a problem when files are transferred from one server to another, the code key will be invalid for the new server, requiring each instance of the applet code to be updated on the new server with a new code key. This can be very labor intensive on large sites in particular.

To ease development in these situations, a code key can be generated to span multiple IP addressed within a specific Class C IP Block. When this new key is implemented, the applet code and key will be valid on a server within the block, and not require changes as files are moved from development, to staging, to production.

If your implementation requires a spanned code key, please contact your Clipstream Video Account Manager and provide them with the IP range you require.

## Remote Delivery

To this point, for simplicity's sake, all sample implementations of Clipstream Video were assuming the Videoclipstream.zip, and the .vcs files were located on the same server, and in the same directory/folder as the web page that wanted to

display Clipstream Video. This sort of implementation is good for small-scale deployments of Clipstream Video, but does not really suit larger sites, and sites using dynamic page creation and database stores of web objects.

Clipstream Video can also be implemented to take advantage of clips stored remotely on another server, or simply in another location on a web server. Frequently, similar file types, such as the .vcs files are centrally located in a file structure and are referred to from other pages. This will allow for easy maintenance of web pages for upgrading, and reduce the number of resources that may be duplicated across a typical web site.

A simple modification to the Clipstream Video applet code will allow remote delivery of Clipstream Video though the addition of a CODEBASE statement to the first line of the applet code. This modification is as follows:

```
<APPLET CODEBASE="http://www.your site.com/video"  
ARCHIVE="videoclipstream.zip" CODE="videoclipstream.class" ALT="The  
Clipstream Video Movie Player" NAME="videoclipstream" WIDTH="3535"  
HEIGHT="53">
```

In this instance, the applet code is directed to look for its resources (in particular the videoclipstream.zip file) in web location of <http://www.your site.com>/video. This location can be edited to suit your particular implementation. You can put the applet code on any web page, as long as the codebase statement points to the server with your content and applet.

When implementing a remote delivery of Clipstream Video there are two essential things to note:

1. The videoclipstream.zip applet and the .vcs files must be delivered from the same Internet server. However, they do not necessarily need to be in the same directory on that server.
2. You will need to have a code key specifically for that server.