



TECHNICAL PAPER

Profiling performance for Flash® Player 10.1 in ActionScript®

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SUMMARY

By adding a small amount of ActionScript® code to your content, it is easy to profile the performance of video playback. You'll need access to your video player source code and a copy of the development tool that was used to create that player (typically either Adobe® Flash® Professional or Flash® Builder™).

SIMPLE VIDEO PLAYBACK

The following code illustrates a simple way in ActionScript 3 to play back video in Adobe Flash® Player. For the sake of example, using Flash Professional, this code should be placed in the first frame of the movie. A VideoPlayer object is dynamically created on the Stage and then a NetStream object plays the video source. You need to rename the video source, `yourVideoSource.f4v`, to your own content. If you are creating a new ActionScript 3 .fla file, set the Stage dimension property to 320 x 240 pixels and background color to black (#000000). (Examples in ActionScript 2 are included at the end of this document.)

```
// add video to stage
var myVideo:Video = new Video();
addChild(myVideo);

// stream the video
var nc:NetConnection = new NetConnection();
nc.connect(null);
var ns:NetStream = new NetStream(nc);

myVideo.attachNetStream(ns);
ns.play("http://www.yourwebsite.com/publicFolder/deploy/video/yourVideoSource.f4v");
```

Download Adobe's [reference video player](#), including sample video clips.

PROFILING THE AVERAGE FRAME RATE

Now let's add some code to calculate the average frame rate and display it on the screen after 60 seconds have elapsed:

```
// This code samples the "currentFps" value once per second.
// After sampling that value for 60 seconds, the average
// is displayed in a text field that overlays the video
var fpsSum:Number = 0;
var fpsCounter:int = 0;
var timer:Timer = new Timer(1000, 60);
timer.addEventListener(TimerEvent.TIMER, timerHandler);
timer.start();
```

```

function timerHandler(e:TimerEvent):void {
    fpsCounter++;
    fpsSum += ns.currentFPS;

    if (fpsCounter == 60) {
        var tfFmt:TextFormat = new TextFormat();
        tfFmt.color = 0xFFFFFFFF;
        tfFmt.size = 18;

        var tf:TextField = new TextField();
        tf.defaultTextFormat = tfFmt;
        tf.autoSize = TextFieldAutoSize.LEFT;
        addChild(tf);
        var avgFps:Number = fpsSum/fpsCounter;
        tf.text = "Avg FPS = " + (avgFps.toFixed(4));
    }
}

```

This sample profiling code relies on the video playback variables in the previous section. If you're integrating this profiling code into an existing video player, you'll want to replace the `NetStream` variable `ns` to whatever variable your code uses. Then, for efficiency, you'll want to start call `timer.start()` when your video begins playing. In our example, the timer event gets called only 60 times before it stops.

Run your video player in full screen (tap it twice), play the video, and read the results from the `TextField` after 60 seconds.

INTERPRETING THE RESULTS

In our tests we have found that a frame rate of at least 15 fps is acceptable for viewing on mobile devices, but 20 fps is preferable. For more information on how to improve the frame rate in your player, read [Optimizing and deploying a video player on mobile devices](#).

Download the [sample code](#) in both ActionScript 2 and ActionScript 3 versions.



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