

Guidelines regarding CPU

Macromedias Flash-player uses the single user's computers CPU (Central Processing Unit) when it handles animation, masks and when it runs coding or computation in Flash. Files which contain advanced animation, transitions, loops and time-based functions, use relatively more of the computers processor power.

The Flash file and the other processors which are being used on the computer compete over the CPU – usage. If an ad demands too much processor-power, it can affect one's own or others ads. Worst case scenario will be that it will affect the computer's capability – and make e.g. the website load slower. When there are more Flash ads on the same page, it is important that all the ads contribute to keeping the CPU-usage low.



There are more ways to keep the CPU-usage low:

- Use less animation, which are based upon mathematical calculations in Action Script.
- Remove unnecessary key frames from the animation and use Tweening-function instead of “frame-by-frame”.
- Reduce the number of frames per second (frame rate) – it should be at the maximum of 18 per second.
- Minimize the use of dissolved pictures, transparency, masks and animations.
- Picture-objects which are used more than once in the flash file, should be converted to symbols. Symbols are saved once in the file – and are being reused later. This reduces both file size and CPU-usage.
- Reduce changes between every key frame.
- Minimize the information that is saved in the first couple of frames. Heavier logic should be saved later in the sequence.
- Functions which are activated by the user, is preferred at rollover or click.
- Avoid unnecessary timer-functions and loops
- Ordinary lines require less memory than dotted lines or lines made by the paint brush tool.
- Group objects and “call” the whole group instead of every single object.
- Minimize the number of fonts and do not convert the text to graphics unnecessary.
- Use vector-graphic instead of pixel-graphic.
- Optimize the vector-graphic. Choose Modify>Smooth, Straighten or Optimize, to reduce the number of vector-points.



Additional factors which affect CPU-performance:

- Several simultaneous animated sequences on numerous layers.
- Animated sequences with transparent background which are above imported graphics (jpg, png, etc.)
- Action Script generated actions which are set to random (e.g. “fog” and “rain”)
- Imported pixel-graphic, which is scaled over a longer time sequence.

A way to control the CPU-usage is to open the Windows Task Manager, by pressing CTRL-ALT-DEL. Under performance it shows a diagram of the CPU-usage. Open the SWF file in the browser and control the diagram again. A small peak of 20-30% is normal. But if the CPU-usage does not stabilize on a relatively low level (5-10%) the file should be adjusted.

Of course the CPU-usage differs between different computers and on which processors they run in. – As a result it can be quite hard to figure out, what the actual CPU-usage is. It is only a minority of the Medias users whom has the latest computer-model, and a lot of them probably have Word, Outlook or other programs open at the same time.

The Media reserves the right to remove ads that do not function properly or uses unreasonable a lot of CPU-usage – without warning.