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Tuning Macromedia Flash* Player

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Paul Betlem
Director of Engineering
Macromedia, Inc.

Dazzling Web Designers and Users

Developers and designers of rich, high-impact content for the Internet want the best tool available to dazzle, engage, and retain their Internet audiences. Macromedia Flash* Player meets their long list of requirements, including a variety of creative design tools, rich media support, fast playback, and quick download time.

Macromedia used the Intel® VTune™ Performance Analyzer to improve the efficient, powerful, Internet-based viewing tool—Macromedia Flash Player.

Intel® VTune™ Performance Analyzer quickly delivers performance results

The Intel VTune Performance Analyzer allows developers to identify and locate performance bottlenecks in their code. The VTune analyzer collects and displays software performance data in three different views. Event Based Sampling displays the performance of your code in relation to processor events. The Call Graph feature shows a “map” of your application and demonstrates graphically where the computing time is spent. The Counter Monitor examines a specific time slice of your code in relation to performance counters. All of these features give developers views of the source code and advice from the Intel® Tuning Assistant.

THE APPLICATION

Solutions for developing and viewing rich Web content and applications

Macromedia provides industry-leading software that empowers developers and designers to create and deliver effective, compelling, and memorable Web content experiences. More than 98 percent of Web users can immediately enjoy the most effective user experiences on the Internet delivered with Macromedia Flash Player.¹ Headquartered in San Francisco, California, the company has operations in more than 50 countries worldwide.



Over 516 million² people use Macromedia Flash Player to view multimedia content and applications created using Macromedia Flash MX, which provides powerful video, multimedia, and application development features for creative developers.

THE CHALLENGE

Macromedia needed to improve product performance

Macromedia wanted to maintain its leadership role as a supplier of Internet multimedia players for viewing Macromedia Flash content and applications on the Internet. To achieve this goal, its engineering team wanted not only to make Macromedia Flash Player run faster, but to improve its ActionScript* performance by 1000 percent.

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Achieving this required improvement in two measures of performance. First, Macromedia engineers needed to improve performance of the player’s rendering engine, which is measured in frames rendered per second (fps). Their goal was to enhance performance of the rendering engine by 25 to 50 percent. Second, they wanted to see a 1000 percent improvement in performance of the ActionScript programming language, a Macromedia-created variant of the JavaScript* language.

THE ANSWER

Intel VTune Performance Analyzer enabled quick performance tuning

Macromedia submitted the player to a series of challenging performance stress tests. During execution of each scenario, Macromedia Flash Player performance associated with each software “build” was measured. The engineers used the VTune analyzer to isolate and drill down into the player code, highlighting those areas in need of additional performance tuning.

The VTune Performance Analyzer allowed the engineers to systematically progress through a “linear” series of tuning iterations, make changes, then immediately execute new test scenarios. As Engineering Manager at Macromedia, Paul Betlem stated, “Using the Intel VTune Performance Analyzer gave us incredible insight into Macromedia Flash Player and enabled us to validate our changes quickly.”

The VTune analyzer provided Macromedia engineers with quick feedback on application performance, often speeding up the process by enabling many-times-per-day iterations through the tests and tuning updates. Ultimately, the team executed several hundred test iterations through their player product as a result of the quick turnaround from the VTune analyzer.



In the end, the VTune Performance Analyzer’s ability to quickly assemble critical application performance data allowed Macromedia engineers to increase the performance of Macromedia Flash Player by 200 percent in some areas and between 600 and 1000 percent in others³.

But more importantly, the VTune analyzer enabled the engineers to squeeze into a fixed development schedule many more testing iterations than would otherwise be possible. Paul Betlem said, “VTune analyzer’s ability to quickly summarize Macromedia Flash Player performance data enabled our engineers to be much more effective at performance tuning within a fixed amount of development time.”

THE ADVANTAGE

Increased performance and productivity

The VTune analyzer’s immediate performance feedback allowed the Macromedia Flash Player engineering team to achieve huge increases in productivity.

There is no question the VTune Performance Analyzer helped Macromedia achieve its performance goals for Macromedia Flash Player. And there’s even less question that, as a result, Macromedia Flash Player can retain its position in the market and continue to deliver high-fidelity content to Windows users on the Internet today.

¹ Macromedia Web site, 2003.

² Ibid.

³ This performance data has been provided by Macromedia, Inc. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing.

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Support.**



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